ENGINEERING and MINING JOURNAL.

VOL. XXXII. No. 13.

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Advertising Rates.—See page 211.

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THE SCIENTIFIC PUBLISHING CO., Publishers,
P.O. Box 4404. 27 Park Place, New York.

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JAMES A. GARFIELD.

Every citizen of the United States, and many a man beyond the seas, feels the death of President GARFIELD as the loss of a personal friend. In whatever aspect the catastrophe be viewed, it is to all a keen and heavy sorrow. The daily history of the chamber in which he made his long, brave fight for life has brought his name and his virtues familiarly near to millions in all lands. In the presence of this universal feeling, the individual grounds of grief seem to dwindle. Yet we must be permitted, while we express the general mourning, to indulge also the emotions arising from a long and cordial friendship.

We made the acquaintance of General GARFIELD during his service in the House of Representatives, and had repeated occasion to invoke his advice and aid concerning the prosecution of the work in the interest of the mining industry which then occupied us. The subject was regarded at that period by most members of Congress with an indifference springing from ignorance. Many who could appreciate its importance were too deeply engrossed in other measures and schemes to lend an active support to the annual appropriation upon which the continuance of the collection of mining statistics depended. In the competition for a show of economy between the Executive departments and the Appropriations Committee, it usually happened that the estimates sent in by the former omitted to provide for this work; and it was necessary for some one to urge the Committee and the House to grant what the department had not asked—a thing which politicians much disliked to do. But General GARFIELD gave this cause from the beginning an intelligent and warm support; and in our intercourse with him, thus occasioned, we learned to know his clear comprehension and statesmanlike advocacy of all the elements of national greatness.

This nation has never had a President more thoroughly acquainted with both the ends and the means of government, or more earnestly devoted to its service. His election placed upon a worthy head the highest earthly crown; his noble patience under pain, and his final calm departure, exchange that crown for the celestial radiance that attends the hero and martyr. *

E. GYBBON SPILSBURY, Mining Engineer, of Messrs. BECKETT & MCDOWELL, machinists, is now on his way to Colorado, and can be addressed at the Windsor Hotel, Denver, until the end of the month.

AS a perusal of our "SPECIAL NOTICES" from week to week will show, the demand for mining engineers, metallurgists, underground bosses, and foremen has been well sustained during the summer, and, judging from the number of persons who offer their services for the various branches in our advertising columns, that demand is promptly met.

ACCORDING to Professor PUMPELLY'S preliminary census report, the iron mines in the United States produced, during the census year 1879-1880, 7,006,417 tons of iron ore, the principal producers being Pennsylvania with 2,173,415 tons, Michigan with 1,834,712, New York with 1,239,959, New Jersey with 799,545, and Ohio with 604,241 tons. Professor PUMPELLY estimates that the 801 mines in the United States have a capacity for producing 13,395,233 tons.

BY cable comes the announcement that at a meeting of the iron-makers of Scotland and the Cleveland District, held at Carlisle, the advisability of curtailing production by about 12½ per cent during the next six months was discussed, and that a decision will be reached at an early date. The war which has been waged between those two great iron-producing regions is thus apparently drawing to a close, and an examination of the stocks at or near the beginning of the month gives a clue to the problem. The stocks in store, not including those in makers' yards, of Scotch pig-iron had risen from 467,899 tons on September 1st, 1880, to 580,173 tons on September 1st, 1881, while the shipments, coast wise and foreign, from the beginning of the year to August 27th were only 369,520 tons in 1881, against 481,913 tons in 1880. In the Middlesbrough District, the total stocks foot up to 437,151 tons, so that between the two the stocks aggregate 1,017,324 gross tons.

WE have frequently predicted that the building of the George's Creek & Cumberland Railroad would prove a benefit to the whole Cumberland region, as well as to those roads which are in a position to take direct advantage of this new outlet. The Cumberland & Pennsylvania Railroad was forced by legislative enactment, in spite of its strongest opposition, to reduce its tolls to two cents per ton per mile; but now, through competition with the new road, it has been compelled to reduce its rates to one and one half cents per ton per mile, or to the same rate as charged by the George's Creek & Cumberland Railroad. The advantage of being able to reach competing markets at a lower price is not the only point gained; for in a loss of tolls the Consolidation Coal Company will be brought to a more thorough realization of its true position—a miner rather than a carrier of coal. It will now be more anxious to secure remunerative prices for its coal, and be willing to join the other companies in the necessary movements to put wages on a proper basis.

MR. JOHN BIRKINBINE, the efficient secretary of the United States Association of Charcoal Iron-Workers, informs us that a meeting of that society will be held in Cincinnati, on October 7th. The Exposition and various points of interest will be visited, and there will be sessions for the election of officers and the reading of papers. On the 10th, a trip through the Hanging Rock region and other iron-making districts in Ohio, and probably also in Kentucky, will be begun and continued until the 13th or 14th, when the last sessions will be held at Ironton. The executive committee has extended a cordial invitation to all interested in the special field of the Association, which, though young, has now become a recognized power through the energy of its officers, among whom Mr. BIRKINBINE has been prominent in his efforts to organize the Association and carry it to its present creditable development. We may add that, following the example of the American Institute of Mining Engineers, the Charcoal Iron-Workers have appealed to the ladies to aid their meetings by their presence.

IN audacity, some of the English wild-cat mining enterprises apparently outstrip any thing that has been accomplished in that way in this country; but there, occasionally at least, the matter gets into the courts with a fair prospect of a severe punishment for the guilty parties. It appears from *Capital and Labour* that a person with a number of *aliases* floated a company under the title of the Silver Valley Mining Company, to work a mine situated in the parish of Caddock, St. Enoder District, Cornwall, representing in the prospectus that the profits by former workings had been £138,000, and that there was lead about the property available for immediate returns. The capital was placed at £75,000 at £1 per share, and applications were received for 25,000 shares. The vendor seems to have made the mistake, however, of conducting an extensive correspondence himself in his capacity of promoter, purchaser, manager, stockbroker, and receiver of moneys in a number of different names, and as the alleged mine turned out to be worth about £10, as far as ore in sight was concerned, and could only show up one broken wheel-

barrow as the representative of an extensive mining plant, he has been prosecuted for forgery and fraud, and stands a fair chance of feeling the weight of the hand of the law. Unfortunately, this is not "*tout comme chez nous.*"

THE announcement that the first furnace of the Colorado Coal and Iron Company, at Pueblo, has begun to produce pig-iron is of more than ordinary significance in two respects. It ushers in a new era in the metallurgical industries of the State, both the coke and ore, as well as the limestone required, being the product of Colorado mines. The plans of the company are comprehensive, including the manufacture of foundry and mill pig, Bessemer steel and rails, nails, bar iron, etc.; and as it owns its own coal and ore mines and limestone quarries, and has bought the Denver rolling-mill, it controls a market through its railroad connections covering a vast area. The enterprise is therefore one of exceptional magnitude, and it is expected that one by one its various departments will be developed at an early date. The successful blowing in of the furnace and the manufacture at the first cast of a fine open-grained No. 1 foundry pig is, however, remarkable in another way also. It may be regarded as one of the most striking recent triumphs of science as applied to metallurgy, and the path taken by the officers of the Colorado Coal and Iron Company is likely to be more largely followed in the future in developing kindred enterprises in any part of this country. It was, at first, the intention of the company to send 500 tons of ore to the East for trial, and application was made to the Vulcan and other works; but the difficulty and expense proved to be so great that it was decided to go on a chemical basis only. A laboratory was fitted up and careful analyses of raw materials available were made, and by securing the most improved modern plant, constructed by well-known builders, every means was taken to secure immediate success under circumstances where under a so-called "strictly practical" *régime*, a long period of tentative efforts would have been gone through. Without any previous experience with ores, fuel, or fluxes to guide them, the managers of the Colorado Company have turned out 60 tons of a first-class product on the first day, running slowly—an event which well deserves to be placed on record in the annals of scientific metallurgy.

THE Lake City, Colo., *Mining Register* of September 9th, in a good-natured review of our letter of July 9th, on that region, controverts the statement we made as to the general character of the ores; says: "There are thousands of tons of glittering proof on the scores of dumps between Lake City and Silverton that the premises and conclusions of the learned gentleman from New York are almost entirely wrong;" and cites a considerable number of mines to support this assertion. We have no desire to maintain a controversy on the subject. Our impressions, formed at the time of our visit, were frankly expressed, and confessed to be only impressions. But we fear that our esteemed contemporary is giving us in reply nothing better; and we take the liberty of pointing out a very natural and common error into which the *Register* has perhaps fallen. The shipment of high-grade ore from a mine may indicate that such is the prevailing character of its ore, or that the current conditions of expense permit no other kind of ore to be shipped with profit. An illustration is furnished by the Dolly Varden mine, mentioned by the *Register* as one of those "whose ores run up into the hundreds." We published last week a summary of the reports on this mine of Mr. W. F. STEWART, J. ALDEN SMITH, and E. E. BURLINGAME (not "Eastern experts," we beg the *Register* to notice), from which it appears that "the high charges for reduction by the smelters forced the former owners of the property to extract only the richest ores, so that considerable reserves of low-grade material were left standing. Besides, this sorting and cribbing of the ore actually extracted has led to the accumulation of a pile of such ore on the dumps, estimated at 11,000 to 20,000 tons by various authorities not mentioned. Its assay is given as ranging from 25 to 60 ounces." Professor SMITH says that little high-grade ore is left in sight. Mr. BURLINGAME, an experienced mill-man, pronounces the ore unfit for concentration, says that the great mass of it is not suitable for smelting or leaching, and advises chloridizing-roasting and subsequent amalgamation. The *Register* is kindly invited to compare these opinions from Western men with our impressions of last July.

"As regards our small smelters that are idle," says the *Register*, "they were mostly built by the advice of Eastern experts, who, like Dr. RAYMOND, misjudged the character and quality of our ores." Does this mean that experts, by underrating the value of the ores, and erroneously deeming them unfit for treatment in small smelters, induced capitalists to erect such works? The gullibility of capitalists is a familiar fact; but we doubt if it goes so far as that. But having considerable acquaintance with the history of small smelters in the San Juan region, we can not accept the *Register's* statement that they were mostly built by the advice of Eastern experts; and we trust it will descend to particulars in support of the assertion.

DURING the past few years, the international money market has been full of surprises; that delicate barometer of its condition, the discount rate of the Bank of England, has undergone some strong fluctuations, and the relation of the quantity of its notes in circulation to its reserves shows some interesting facts. The long depression following the series of crises inaugurated by our own in 1873, and the severe lessons which it taught holders of speculative government, railway, and other securities, created an exceedingly conservative spirit, and large blocks of capital accumulated in the banks, depressing the rate of interest below any figures recorded in former periods. While, previous to the depression, it was for years the principal aim of the banks to cover at least one third of their note circulation by reserves, this circumstance caused an extraordinary state of affairs. For two years almost, with few exceptions, the Bank of England held an excess of millions of specie, while with the other principal banks the reserves reached from five sixths to nine tenths of the note circulation, and the requirements of the fall business for moving crops did not even change this much. In the middle of October, 1878, the note circulation of the Bank of England was 29·8 millions of pounds sterling, while the specie reserves were 23·3 millions, and the rate of discount had been increased from 3½ per cent in the first part of July to 6 per cent. At that time, however, the failure of large banks had created a crisis. In the beginning of 1879, matters changed entirely. On the first of January of that year, the note circulation was 32·7 millions against a reserve of 28 millions, the discount rate being 5 per cent. On the 21st of May, the latter stood 4 millions of pounds higher than the former, and the rate had declined to 2 per cent. It was held at that point until November 5th, when the beginning of the gold movement to this country forced a rise to 3 per cent, the excess of specie over circulation being 1¼ million pounds. In the middle of October last, the specie was half a million in excess, though the rate was 2½ per cent, and gold continued to flow to New York, and even in the middle of June of this year it was a quarter of a million. A sudden change commenced in the beginning of this year; the note circulation was higher than the specie, the rate being 2½ per cent, while the note reserve still stood above the safe figure of 15 millions. On the 17th of August, the note circulation had increased by 2½ millions and the note reserve had decreased to 13¼ millions, so that the directors of the bank were induced to place the rate at 3 per cent. A week later, the figures were 2·8 and 13 millions respectively, and the rate was advanced to 4 per cent. Four weeks later, an additional sum of 2,230,000 pounds had gone out, and no gold had come in, the main drain being to this country, which, as is well known, still continues to draw godl.

THE New York Free-Trade Club has commenced the publication of a *Free-Trade Bulletin*. This is of interest only as showing a greater activity in the movement for the much-needed revision of the tariff in the direction of simpler and generally lower duties. No one supposes that absolute free-trade can be adopted in this country for many years to come, though the fact, unquestioned by the most ardent protectionist, that free-trade is a benefit as between the several States of the Union, is equally true as a broad principle of political economy when applied between independent states. The advantages which any country gains by imposing high duties on foreign products are apparent only while that country has but little export trade, or while it can secure from other nations lower duties on its own products than it allows them on theirs. As a general principle, there is no argument in favor of protective duties or free-trade as between independent nations that is not equally good when applied to tariffs between different districts of the same nation. This, of course, takes no account of national sentiments or prejudices, or of the evident convenience of raising a national revenue by duties on imports rather than by a direct tax; for, as *Punch* recently suggested for the motto of the English Fair-Trade League, "He that is taxed, not seeing how you tax him, let him not know it, and he's not taxed at all." Nor does this view take into account the element of individual interests, which is by far the most potent in influencing the policy of nations in such matters.

No one can question the benefit to individual manufacturers or producers in having that freedom from competition which high protective duties afford them until these have induced, as they inevitably do, an overproduction in that department of industry; and this direct personal benefit is nearly the same whether their countrymen or foreigners pay for it. Of course, every country is benefited by the establishment of industries for which it contains the elements of success; and there are not a few cases where it would be impossible to establish such industries in a new country without the aid of a bounty or protective duty. The danger to the general public—the consumers—lies in the fact that industries fostered by this government subsidy become so profitable as to cause those engaged in them to neglect the study of economy in production, or else to use their enormous profits to perpetuate the subsidy far beyond the necessities of the case. Examples of both these abuses are not wanting in this country, and the knowledge of this fact is becoming so gen-

eral that there seems every probability of a revision of the tariff being made at an early date.

The protectionists, with rare foresight and wisdom, seeing this, have called a meeting to consider the question of a revision of the tariff, and no doubt will rise to that sublime hight of patriotism shown by ARTEMUS WARD, who, during our civil war, was willing "to sacrifice his wife's brother" to the sacred cause.

THE MINERAL STATISTICS OF GREAT BRITAIN FOR 1880.

Since 1839, when the Mining Record Office was established, Mr. ROBERT HUNT has annually collected the statistics of the mining and smelting industries of Great Britain; and since 1848, a volume containing the data thus gathered has been published annually by him. It is true that by the enterprise of individual firms, trade associations, and the Board of Trade, many of the statistics which have a direct influence upon commercial operations are given out more promptly, and, though they do not profess to be more than mere approximations, possess a greater practical interest because of their early issue. Mr. HUNT has endeavored to push the publication of his report as much as possible, but justly regards accuracy as the paramount consideration, so that neglect to furnish returns, even in one case, delays the whole work. His figures are the official ones, and as such supersede any printed by others at an earlier period. From the general summary for the year 1880 we take the following figures, in tons of 2240 lbs.:

PRODUCTION OF MINERALS IN 1879 AND 1880.

	1879.	1880.
Coal	134,008,228	146,818,622
Iron ore	14,379,735	18,026,050
Tin ore	14,655	13,738
Copper ore	51,052	52,118
Lead ore	66,877	72,245
Zinc ore	22,200	27,548
Iron pyrites	20,276	31,708
Manganese	816	2,839
Arsenic	5,492	5,738
Clays	2,878,489	3,062,544
Salt	2,558,368	2,645,000

METALS OBTAINED FROM THE ORES PRODUCED IN THE UNITED KINGDOM.

	1879.	1880.
Silver from ore, ounces	3,000	1,765
" " lead, "	333,674	295,518
Pig-iron, tons	5,995,337	7,749,233
Tin, "	9,532	8,918
Copper, "	3,462	3,662
Lead, "	51,635	56,949
Zinc, "	5,554	7,162

COAL.

The output of coal, it will be seen from these figures, was increased during the year by 14,858,759 tons, of which quantity Mr. HUNT reports that 2,342,573 tons were due to larger shipments to foreign countries, 3,565,218 tons to an increased consumption in the blast-furnaces, an estimated increase of 2,000,000 tons in all other branches of iron manufacture, and 524,956 tons added to the coal used by foreign ships. The total quantities of coal exported were 18,719,971 tons in 1880, against 16,442,295 tons in 1879, the principal customers being France, with 3,715,762 tons; Germany, with 2,241,064 tons; Russia, with 1,503,631 tons; and Italy, with 1,534,765 tons. Our own country received 83,652 tons through Atlantic ports and 84,135 tons of coal and 16,052 tons of coke through Pacific ports. There were in Great Britain, in 1880, 3880 collieries, the principal producing district being Northumberland and Durham, the so-called Cleveland District, where 34,627,283 tons of coal were raised. The figures for the make of coke in this district are not complete, as the quantities used at iron-works, mills, forges, and foundries can not be estimated. Mr. HUNT, however, gives the quantities carried over railroads for local use, and the amounts exported, which were 4,960,774 tons. Among the other prominent coal-producing districts are Yorkshire, with 17,473,525 tons; Glamorganshire, with 15,519,362 tons; Lancashire, with 19,080,000 tons; and the Eastern district of Scotland, with 12,019,443 tons.

IRON.

The 567½ blast-furnaces in blast in 1880, out of 924 built, produced 7,749,233 gross tons of pig-iron, consuming 16,682,629 tons of coal, the coke used being computed as coal. Unfortunately, the quantities of raw coal and coke used are not given, so that we have no means of tracing the relative economy of fuel in the blast-furnaces themselves. The broad fact, however, that 2·15 tons of coal per ton of iron were consumed, is in itself significant, and shows that there is much room for improvement. It may be of interest to compare with this our own consumption of coal per ton of iron, on the basis of figures furnished by Mr. JAMES M. SWANK, in his recent preliminary census report. Deducting from the whole output for the census year the quantity of pig made with charcoal, we have a production of 3,341,774 net tons of pig made with anthracite, coke, and bituminous coal, and a mixture of anthracite with the other kinds of fuel. Our furnaces actually used 2,615,182 net tons of anthracite, 1,051,753 tons of bituminous coal, and 2,128,255 tons of coke. In order to reach a comparison, we must compute the coke and anthracite as coal. For the former, assuming the yield of coking coal to be 60 per cent on an average, we have 3,547,092 tons, and for anthracite, taking its comparative value as a blast-furnace fuel as 90 per cent of coke, we have 3,922,773 tons, making an estimated total of 8,521,618 tons, or 2·55 tons per ton of pig produced, which is considerably higher, if our assumption of the equivalent of the various fuels for blast-furnace use is approximately correct.

IRON ORE.

The quantity of iron ore used to produce last year's make of the furnaces of the United Kingdom was 18,026,409 gross tons of English ores, 2,632,601 tons of foreign ores imported, and 427,730 tons of "purple ores" from pyrites imported. It would be rash, however, to conclude from these figures that it took 2·72 tons of ore to make one ton of iron, because, aside from a small quantity of ore exported, a very considerable quantity of rolling-mill cinder was smelted which is not included in the returns, and on the other hand much ore is used for fettling. It would be more unsafe still to argue that because it required 2·72 tons of ore to make a ton of pig, the ore charged into the furnace contained only 37 per cent of metallic iron. This figure is reached by neglecting entirely the fact that a very large proportion of the ores smelted in England, Scotland, and Wales are roasted before they go to the furnace. The quantity of argillaceous carbonates and black band returned to the Mining Record Office for 1880 was 5,397,477 tons. Of these, 1,435,647 tons were Scotch black bands, which are always roasted, and lose from 40 to 60 per cent in weight by being submitted to that process. In the Cleveland District, 6,441,783 tons of iron ore were raised from the coal measures, and as they, too, are generally roasted, losing at least 20 per cent, and there are other regions where the practice is similar, it must be evident that the weight of ore that goes into English and Scotch furnaces is very much less than it would seem from the returns of the output of the mines, and that therefore the average percentage is much higher than any rough calculations might lead us to believe. In producing 3,781,021 net tons of pig during the census year, our furnaces consumed 7,256,684 tons of iron ore and 354,048 tons of mill cinder, a total of 7,610,732 tons, or 2·01 tons of ore per ton of pig. This would represent an average percentage of 49·7, or nearly fifty per cent.

TIN AND COPPER.

Turning to the metals, we find that Great Britain produced 8918 tons of tin from 13,738 tons of ore, imported 19,498 tons of tin and 190 tons of ore, and exported 4419 tons of British tin and 8722 tons of foreign metal, of which 796 and 6536 tons respectively came to this country. Great Britain produced in 1880, 52,128 tons of copper ore holding 3662 tons of fine copper, the great bulk of the mineral coming, as is the case with tin also, from Cornwall and Devonshire. Adding to this, 1949 tons of copper from 22,404 tons of ore sold at Swansea ticketings, 7796 tons from 78,016 tons of ores not sold at ticketings, 15,000 tons of copper obtained by leaching 415,567 tons of burnt ore from pyrites, and 20,500 tons from 45,055 tons of imported precipitate and regulus, we reach a total of 48,907 tons made in the smelting-works of the country. It will be seen what a large business the copper-smelting companies of England do, the quantity of foreign copper smelted and refined by them being about 30,000 tons, while those who work burnt pyrites turn out 15,000 tons. Besides the ore, regulus, and precipitate imported, in which Spain figures with 4741 tons of ore and 20,482 tons of regulus, Newfoundland with 22,066 tons of ore and 92 tons of regulus, Venezuela with 15,216 tons of ore, Chili with 1385 tons of ore and 14,659 tons of regulus, and Bolivia with 5781 tons of ore and 2194 tons of regulus, England obtained 24,258 tons of ingot copper from Chili—a falling off from 33,534 tons in 1879—9406 tons from Australia, and 2845 tons from other countries; a total of finished copper of 36,509 tons in 1880, against 46,670 tons in 1879. Its exports of ingot copper were 15,208 tons, and its total exports of manufactured, partly wrought, and unwrought, were 49,408 tons in 1880, against 49,568 tons in 1879.

LEAD.

In 1880, British mines turned out 72,245 tons of lead ore, 56,949 tons of lead, and 295,518 ounces of silver, the average grade of the ore showing therefore 78·527 per cent of lead, a proof of very close concentrating. The imports were 13,968 tons of ore and 95,049 tons of lead, of which Spain furnished 67,584, Greece 7142, Germany 6646, Holland, in transit from Belgium and Germany, 5634, and Belgium 5165 tons. The exports footed up to 21,797 tons of pig-lead and 11,754 tons of sheet and pipe, the principal consumers being China, with 9691 tons of pig; Japan, with 1511 tons of manufactures; France, with 2404 tons of pig; and Russia, with 5306 tons of pig and 2012 tons of manufactures.

ZINC.

Great Britain produced 27,548 tons of zinc ore, from which 7162 tons of metallic zinc were made. Besides this, 43,177 tons of ore were imported, Italy sending 11,028 tons, Greece 11,485 tons, and Algeria 17,578 tons. The imports of crude spelter were 33,301 tons, 13,480 tons coming from Germany, 7996 tons from Holland (in transit), and 9402 tons from Belgium. Besides this, 16,677 tons of manufactures were received, Germany contributing 3797, Holland (in transit) 6678, and Belgium 5907. On the other hand, the exports of spelter and manufactures of it were sent

to a large number of countries throughout the world, the total footing up to 12,237 tons, of which British India took 7640 tons.

In conclusion, we may be allowed to give some data on the imports of pyrites and the amounts treated by the extraction works after roasting for the manufacture of sulphuric acid. In 1880, the total imports of pyrites into England footed up to 658,047 tons, against 481,392 tons during the previous year, and 679,312 in 1877. Of this quantity, Portugal sent 166,519 tons, and Spain 463,199 tons. The consumption of burnt ore in 1880 by the metal extraction works was 415,567 tons, of which the Tharsis Company alone treated 188,240 tons.

ANTHRACITE COAL TONNAGE.

Mr. JOHN H. JONES, accountant, furnishes the following statement of anthracite coal tonnage for the month of August, 1881, compared with the same period last year:

	August, 1881.	August, 1880.	Dif'r'nce, Increase.	For year 1881.	For year 1880.	Difference Increase.
Philad'a & Read. RR..	707,819 16	470,222 18	237,596 18	4,272,485 04	3,494,892 01	777,603 03
Lehigh Valley RR.....	530,606 16	368,929 01	161,677 15	3,521,043 14	2,619,543 08	901,497 14
Cent. RR. of N. J.....	367,471 10	277,027 08	90,444 02	2,577,516 14	2,020,051 06	557,465 08
Del., Lack. & W. RR...	417,957 00	280,247 10	137,709 10	2,748,313 15	2,118,728 06	629,585 09
Del. & Hud. Canal Co..	305,638 14	183,578 17	122,059 17	2,007,381 13	1,608,838 05	398,843 08
Pennsylvania RR.....	200,145 01	204,937 04	*4,792 03	1,440,586 14	1,100,022 18	340,563 16
Penn'a Coal Co.....	131,123 13	81,465 07	49,660 06	892,993 10	631,009 02	261,984 08
N. Y., L. E. & W. RR..	42,785 07	29,107 11	13,675 16	312,523 02	251,354 01	61,169 01
Total.....	2,733,547 17	1,895,515 16	838,032 01	17,773,144 06	13,844,431 19	3,928,712 07

* Decrease.

The stock of coal on hand at tide-water shipping points, August 31st, 1881, was 652,943 tons; on July 31st, 1881, 674,616 tons; decrease, 21,773 tons.

That the stocks of coal, under the cry of over-production, should actually show a decrease for the month of August is very gratifying as well as surprising.

The shipments for the month of August this year, amounting to 2,733,548 tons, or at the rate of nearly 33,000,000 tons per annum, were very large, and are not likely to be repeated during another month of this year.

All the companies show an increase of shipments for August, as compared with the same month last year, excepting the Pennsylvania Railroad, which shows a slight decrease. This was caused by a strike at this company's works at Nanticoke.

Should the companies be able to reach an average of shipments of 525,000 tons from September 1st to the end of the year, it would bring the shipments up to 27,000,000 tons. The consumption at the mines, which is not included in the shipments, and which is estimated at 6 per cent, would bring the actual production up to over 28,500,000 tons.

THE SAN JUAN COUNTRY.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I am only a miner, have no property for sale, and am connected in no manner with existing or prospective companies; but I believe in the future of the San Juan mining country, and respectfully beg leave to submit a few notes regarding developments of the present season and prospects for the future. We have no special "boom," and we need none. The great carbonate camp in the north has monopolized the attention, in Colorado, of capitalists and experts for the past three years, and we shall never have another Leadville. Yet the rugged region known as San Juan, in the southwest, has bided its time. Railroads are converging toward this center from three opposite directions. Trains now arrive daily at Durango, Del Norte, and Gunnison—all within one hundred miles. The transformation has already been great, and it will be greater still. More intelligent work has been done on our mines this year than in any preceding season. Several valuable properties have recently changed hands, and active preparations are making for the winter campaign. Pay-ore is now shipped from the Mountain Queen, Red Cross, British Queen, Saxon, and North Star mines for treatment at the Eclipse smelter, at Crookes Brothers, Lake City, at Pueblo, and at Denver. The Red Cloud, Bonanza, and Cunningham Gulch mines, within six miles of this point, have two thousand tons of pay-ore on their dumps, awaiting railroad transportation. The Eclipse smelter, located here, recently completed by Prof. James Cherry, has been running successfully since the 8th ult. Its capacity is twenty tons. It has a Blake crusher and a Baker blower. The Mountain Queen and Red Cross mines, owned by the Eclipse Company, are worked with large forces. The ore—bismuth and galena—from the former averages 296 ounces of silver per ton. The Eclipse is located at an altitude of 11,000 feet. The Pony lode, with but a few feet of development, shows 20 inches of galena and sulphurets, and seven inches of brittle silver, and a recent mill-run certifies to $205 silver per ton.

Burrows Park and Jones Mountain, four miles distant, are attracting much attention. The Broadway, Imperial Bower, Moss Agate, Black Crook, Boomerang, Hilda, Crown Point, Five Twenty, Red Gulch, and A No. 1 lodes are under active development, and have ore on the dumps that will pay for shipment to Pueblo. There will be a great deal of work in the neighboring camps during the winter. Supplies can be secured at comparatively cheap rates. A weekly mining paper will be launched here next month. We have the telephone. MOSS AGATE.

ANIMAS FORKS, SAN JUAN CO., COLO., Sept., 1881.

South Carolina Phosphates.—Since the first shipment of six tons of crude phosphate rock in 1867 from South Carolina ports, the trade has steadily grown, and it is now estimated by Dr. Andrew Simonds that the shipments to foreign and domestic ports will reach 300,000 tons of crude ock in the current year.

SAN JUAN SILVER AND GOLD MINES.

Special Correspondence of the Engineering and Mining Journal.

Having heard some pretty stiff yarns about the amount of gold that was taken out of some placers in the San Miguel District, I started early this morning from my camp on the Imogene Basin, with my partner and Mr. A. L. Begbie, an English mining engineer, to see, if possible, what there was in it, and at any rate, to get some bed-rock information on the subject. A climb of one thousand feet took us to the top of the divide between the Mount Sneffels District and the San Miguel; then a mile across a bench or plateau, and another ascent of five hundred feet, and we were looking down the valley of the Rio San Miguel, the town of that name being visible at a distance of about five miles, and at least five thousand feet lower than the summit on which we stood, the altitude of the same being twelve thousand five hundred feet above tide-water. Here is to be seen one of the most beautiful views in this San Juan, a country so wonderfully prolific of grand scenery. From here the eye can trace the course of the San Miguel River through a deep cañon, with high mountains on each side for a distance of about thirty-two miles, to where Beaver Creek empties into it; then the high cactus and sage-brush mesa which intervenes for a distance of twenty-five miles between Beaver Creek and the mouth of the Naturita, where another big placer gold excitement is said to be brewing; and beyond that again, the blue outline of the Sierra la Sal Mountains, at least one hundred miles distant.

A descent of 1500 feet and a distance of two miles, or about four miles altogether from my camp, brought us to a comfortable log cabin in a little park of pine trees, where live the four lucky owners of the richest placer claim ever discovered in this section. The owners were extremely polite, and showed me, I may say without exaggeration, a cabin full of specimens, small ones on the shelves and big ones under the bunks, one so big that it had to be rolled over to show me, instead of lifted—not solid gold, however, but a quartz boulder full of fine gold, and vughs, or pockets, containing matted wire-gold and leaf-gold, the fine gold being just as thick in the rock as the iron pyrites in the porphyry vein-stuff of our silver lodes. A few yards from the cabin they were picking and digging out the float—for that is all it is—and shoveling into their sluice-box, and then when the water had washed the quartz clean, picking out the chunks that contained visible gold and saving them for subsequent crushing in a mortar. There is a great deal of galena in the gold quartz, and so they were not using any quicksilver. It is commonly reported there that the four owners are taking out somewhere about $100 per diem, and occasionally as high as $25 to the pan. Being a stranger to them, I did not like to ask any questions; but from the enormous quantity of gold I saw in the rock, I am inclined to think that $100 per day is likely to be under rather than over the mark.

The next question is, Where does this float come from? Well, if water has brought it there, it has not come far; for in it were masses of galena that one man could not lift, and as a brother miner who was with me said, "That's derned poor stuff to float." No; it was evidently not water work, from the weight of the masses of lead ore and the size and sharp, jagged appearance of the quartz boulders. In fact, I could see no evidences of the action of water; but going up a few feet above where they were washing, I could see on the bare bed-rock the striation-marks of glacial action bearing down the gulch from the great basin above. Now, this basin is crossed by large known lodes, many of them being visible where they cut through the trachyte peaks that encircle it, and doubtless there are many unknown lodes; therefore, it would be folly to say which of them this float comes from, more especially as the quartz and ore from some of these lodes closely resemble one another; but in our opinion, one of these lodes has been "broken over" or cut down by glacial action and the "float" or proceeds of that breaking down is now found by the lucky gold-hunters. Some day soon, the lode will be found, and then there will be a "hooraw," as it is called here. Free gold has been found both in galena and in zinc-blende in this San Miguel District, and the question there seems to be not so much, where gold *is*, but where it is *not*.

In Imogene Basin, Sneffels District, four miles from this gold, the Allied mines have made a most important strike in the Yellow Rose mine. For 200 feet on this vein, in the No. 2 level, they have had ore from one to two feet in width, running from 20 to 130 ounces in silver per ton, the ore being principally bright galena associated with copper and iron pyrites, gray copper, and blende in a matrix of very white crystalline quartz. At 20 feet back of the present face or breast, a sampled assay of eight inches of galena gave returns of $323 per ton, which somewhat astonished the superintendent; but a few more shots in the ore threw out large masses full of pockets of native silver in leaves and wires, and in many places silver-glance, with the native silver sprouting out of it. These are not occasional pockets of native silver; for in two feet six inches wide of ore the pure metal is evenly distributed through it in very fine leaves and wires, it being almost impossible to break it up without finding native silver in some of the pieces. Some of the masses of ore which have been saved as specimens weigh from 10 to 100 pounds, and have native silver and silver-glance all through them.

The editors of the Ouray *Times* and *Solid Muldoon* visited the strike last week, and I have no doubt the notices in their papers will corroborate what I say, and the *Muldoon* is notorious for taking the bear side of the question, rather than exaggerating. This rich ore was struck 330 feet below the surface and 470 feet in from the entrance of the tunnel, and is a very substantial proof of the correctness of my theory that, in those Sneffels veins, you must get into the mountain to get rich ore. Depth is all that is needed, and it must be remembered that depths of 1000 feet can be gained on some of these veins by drifting alone: this makes a tremendous difference in the margin of profit over veins where you have to sink, pump, and hoist for every foot.

By the way, a new feature in the craft of mining sharps has lately been developed here. I have heard of more than one rich strike being made during this summer and the work being immediately shut down and the tunnel locked up, the men being told to say nothing about it. For what? Simply to freeze out some co-owners or stockholders, or else to buy out for a few dollars some poor miner who holds a claim on the same vein, and does not know its value. Tar and feathers would be too good for such scoundrels.

T. Currie Gregory, Esq., F.G.S., C. and M.E., was in Ouray last week, examining some San Juan property for London parties; and from what he told me, I inferred that English capital was beginning to look toward this region. So mote it be, and if they will only buy cautiously, they will get better value for their money than in any other district in Colorado, as our values are not inflated. W. W.

OURAY, COLO., Sept. 8.

ANCIENT COPPER MINES OF ISLE ROYALE.*

By Professor N. H. Winchell.

(*Concluded from page* 186.)

Following are a few quotations from early journals and histories that seem to demonstrate not only that the Indians used and mined native copper, but that they also erected mounds of earth, or of stones, in commemoration of their honored dead and for sepulture. The Indian is a dull utilitarian. He is but little given to sentiment. As he knows nothing of the future, so he remembers little of the past. Hope and history are alike feeble in his mental garniture. His traditions are worthless, and "his chronology of moons and cycles is an incoherent and contradictory jumble."† If he says he knows nothing of these relics, his testimony can apply only to himself personally; for his ancestors, on the most undeniable evidence, did know all about them.

In regard to the use of copper, and the mining of it by the American aborigines, may be made the following quotations and references:

In the *Collections of the New York Historical Society*, second series, vol. i., is given a translation of the Italian account of the voyage of John de Verazzano along the coast of North America, from Carolina to Newfoundland, A. D. 1524. When about at Narragansett Bay and Harbor, he makes these notes: "We saw upon them [the aborigines] several pieces of wrought copper, which is more esteemed by them than gold, as this is not valued on account of its color, but is considered by them as the most ordinary of the metals, yellow being the color especially disliked by them; azure and red are those in highest esteem by them." Further on he says of another tribe: "In this region we found nothing extraordinary except vast forests and some metalliferous hills, as we infer, from seeing that many of the people wore copper ear-rings."

Henry Hudson's ascent of the river that bears his name is given in the same volume, in the form of a journal kept by Robert Juet, mate. Speaking of the natives, on page 323, Juet says, "They had red copper tobacco-pipes, and other things of copper they did wear about their necks;" also, "They have great tobacco-pipes of yellow copper;" also, on page 300, Hudson himself says, "The people had copper tobacco-pipes, from which I inferred that copper might naturally exist there."

Raleigh observed copper ornaments among the Indians on the coast of the Carolinas; Granville, in his voyage in 1580, observed copper in the hands of the natives of Virginia, and made an effort to reach the place where they said it was obtained. After a toilsome journey into the interior, of some days' duration, the attempt was abandoned. Heriot's "Voyage," in Pinkerton, vol. xii., p. 594, gives an account of copper found "in two towns one hundred and fifty miles from the main, in the form of divers small copper plates, that are made, we are told by the inhabitants, by people who dwell farther in the country, where they say are mountains and rivers which yield white grains of metal, which are deemed to be silver. For confirmation whereof, at the time of our first arrival in the country, I saw two small pieces of silver, grossly beaten, about the weight of a tester [an old coin about the weight of a dime], hanging in the ears of a Wiroance. The aforesaid copper we found to contain silver." McKenzie found copper in use among some of the extreme northern tribes, on the borders of the Arctic Sea, according to his "Second Voyage," page 333, as quoted by Squier.‡ "They point their arrows and spears with it, and work it up into personal ornaments, such as collars, ear-rings, and bracelets, which they wear on their wrists, arms, and legs. They have it in great abundance, and hold it in high estimation." Alexander Henry, in his "Travels," page 195, states that the Indians obtained copper at Lake Superior, "which they made into bracelets, spoons, etc." De Soto found copper hatchets in possession of some of the tribes along the coast of the Gulf of Mexico, which they stated they obtained from a province called Chisca, far to the north. Claude Allouez, in 1666, visited Lake Superior, and states that "it happens frequently that pieces of native copper are found, weighing from ten to twenty pounds. I have seen several such pieces in the hands of savages; and, since they are very superstitious, they esteem them as divinities or as presents given to them to promote their happiness, by the gods who dwell beneath the water. For this reason they preserve these pieces of copper, wrapped up with their most precious articles. In some families, they have been kept for more than fifty years. In others, they have descended from time out of mind, being cherished as domestic gods. For some time, there was seen near the shore a large rock of copper, with its top rising above the water, which gave an opportunity for those passing by to cut pieces from it; but when I passed that vicinity, it had disappeared. I believe that the gales, which are frequent, like those of the sea, had covered it with sand. Our savages tried to persuade me that it was a divinity who had disappeared, but for what cause they were unwilling to tell" (Foster and Whitney's *Report on Lake Superior*, Part I., page 7). Dablon, in his "Relation" for 1669–70, states that "the savages did not agree as to the source of the copper. Some say that it is where the river [Ontonagon] begins, others that it is close to the lake, in the clay, and others at the forks and along the eastern branch of the river." Again, Dablon gives an account of its being reputed to occur on an island about forty or fifty leagues from the *Saut* toward the north shore, opposite a place called Missippicoatong (Michipicoten?). The savages related that the island was a floating island, sometimes near and at other times far off. These statements, with other particulars, make it very probable that the Indians of Lake Superior were familiar with the localities prior to their acquaintance with the French, and that the place here described can be no other than the even then celebrated mines of Isle Royale.

Jacques Cartier in 1535 spent the winter at or near Quebec, and learned several facts concerning copper that was in possession of the Indians, which he has given in his *Brief Recital*. They made an effort to explain to him where the copper came from. They gave Cartier to understand that there were large quantities where they obtained it, situated on a bank of a river near a lake. One of the chiefs drew from a sack a piece of copper a foot long and gave to Champlain. "This was quite pure and very handsome." He said they had "gathered it in lumps, and, having melted it, spread it out in sheets, smoothing it with stones."* The Indians at Montreal and Quebec, in 1535, were familiar with the fact that Saguenay was a copper-bearing region. John Gilmary Shea, LL.D., says (Shea's *Charlevoix*): "The Saguenay of the St. Lawrence Indians was evidently the Lake Superior region, and possibly the ports accessible by the Mississippi. The river Saguenay was not so called from being in, but from leading to Saguenay." Thus, at a distance of from eight hundred to one thousand miles from its origin, Cartier, in 1535, and Champlain, in 1610, encountered Indians who informed them of the manner of mining and of manufacturing copper implements, Champlain stating that the copper was melted.

It is not presumed that this is a complete list of historic references to the use of copper and copper mining by the Indians; but it is amply sufficient to show that it is not necessary to invoke a strange race, prior to the Indian, to account for all the copper implements and the nuggets of copper that have been found in the mounds, as well as for those found on the surface of the ground throughout the Northwest.

The term *mound-builders* is distinctively applied to the race that constructed the remarkable earthworks of the valley of the Ohio and of the interior of the United States in general; but it is true that in nearly all parts of the world the practice of mound-building has prevailed, sometimes among nations that come within historical epochs. Mounds are found among the Celts and the Scythians, in the Sandwich Islands and in New Zealand, in Japan and India, and throughout the central parts of the Eastern continent, as well as in both Americas, from the country of the Esquimaux to Chili and Fuegia. The earliest of human records refer distinctly to this method of honoring the dead. The heroic age of Greece, as sung by Homer, abounded with ceremonies and curious details relating to the *tumulus* erected over the bones of the slain hero. The burial of Patroclus, as related in the twenty-third book of the *Iliad*, is an illustration of the practice of mound-building by the ancient Greeks:

> "The sacred relics to the tent they bore,
> The urn a veil of linen covered o'er.
> That done, they bid the sepulcher aspire,
> And cast the deep foundations round the pyre;
> High in the midst they heap the swelling bed
> Of rising earth, memorial of the dead."

At the burial of Hector, the Trojans erect a pile of large stones over the urn containing his remains, and upon that pile up the tumulus. When Æneas buried the pilot of his fleet, Misenus, he

> ". . . piously heaped a mighty mound sepulchral."

Artachæas, superintendent of the canal at Athos, was honored by Xerxes with a memorial mound which still remains, in remembrance of the skill of that engineer, and an evidence of the custom of the Persians. The Scythian kings are entombed in *tumuli* along the banks of the Dnieper. Orestes, bewailing his father, Agamemnon, says:

> "If but some Lycian spear 'neath Ilium's walls
> Had lowly laid thee,
> A mighty name in the Atridan halls
> Thou wouldst have made thee.
> Then hadst thou pitched thy fortunes like a star,
> To son and daughter shining from afar,
> Beyond the wide-waved sea the *high-heaped mound*
> Had told forever
> Thy feats of battle, and with glory crowned
> Thy high endeavor."

In Asia Minor the tomb of Alyattes, the Lydian king, has a circumference of nearly a mile, requiring ten minutes to ride round its base. In the same neighborhood, near the Lake Gygæa, are numerous other circular mounds.

The same practice was continued into the later days of Grecian history. Alexander raised a mound over Demaratus, which, Plutarch says, was "eighty cubits high and of vast circumference." The *tumulus* erected on the plain of Marathon, in commemoration of the one hundred and ninety-two Athenians who fell in the battle, is near the sea, and is to be seen by all travelers. It is about one hundred feet in circumference, and about twenty-five feet high. Finally, coming within the scope of modern history, the construction, at the order of the English government, of a mound of earth on the plains of Waterloo, attests the tenacity of that sentiment of veneration for the dead who die in the service of their country, and the persistence of a practice, which seems to be common to all mankind and to have survived from prehistoric times, of resorting to the mound of earth, as being at once the easiest made and the most enduring monument in memory of the departed.

The practice of mound-building not being distinctive of any race, tribe, or epoch of the human family, it may be considered not at all unlikely that the aboriginal tribes of America, perhaps without exception, had their ceremonies and habits of burial, if not other rites of a sacred character, in one way and another associated with the erection of mounds of earth. Indeed, it would be a remarkable exception if the native Americans did not erect mounds. They possessed the land without molestation prior to the discovery of Columbus. They had the necessary elements of perpetuity and stability, at least so far as these can be predicated of savage tribes. They cultivated the soil and conducted a considerable trade with their neighbors. They exhibited all other characteristics common to mankind in an uncivilized state. The denial of their resort to mound-building, for the same purposes as other tribes in similar circumstances, carries with it the necessity to account for such an anomalous exception.

It is often stated that the Indian, when interrogated concerning the

* From the *Popular Science Monthly* for September, 1881.

† Short, *The North Americans of Antiquity*, p. 22.

‡ *Smithsonian Contributions*, vol. ii., p. 117. Bancroft (*Races of the Pacific Slope*) mentions the mining of copper on Coppermine River, by existing tribes.

* Champlain's *Voyage du Sieur du Champlain*, Paris, 1613, p. 246, as quoted by Slafter.

mounds and earthworks of the country, shakes his head in ignorance, affirming that he knows not their origin. This fact is carried further than it should be when it is invoked to prove the non-Indian origin of these mounds. Admitting, with some reservation, that the Indian at present knows nothing of the origin of the mounds, still it may be true that his immediate ancestors were familiar with the facts of their erection. The Indian has been driven from the home where he was born, and where his ancestral traditions and customs have centered and exhibited their unconstrained development, and has been a fugitive for several generations, from the cupidity and the bayonet of the white man. When it is remembered that the erection of a mound, similar to those seen all over the Northwest, was not the act of a day, nor of a year, but of many years, and perhaps generations, it is easy enough to understand why the custom has become so nearly extinct. The Indian has become greatly modified by contact with the European. He has gradually been compelled to forsake many customs and abandon arts which came into competition with the customs and the arts of the stronger race. The semi-nomadic life which he has been compelled to adopt has not been favorable to the erection of mounds, which requires the quiet of permanent and peaceful residence.

We are not, moreover, without testimony to the fact that the present Indian tribes did build mounds. Lewis and Clark mention the custom among the Omahas, saying that "one of their great chiefs was buried on a hill, and a mound twelve feet in diameter and six feet in hight erected over him." Bertram states that the Choctaws covered the pyramid of coffins taken from the bone-house with earth, thus raising a conical hill or mound. Tomochichi pointed out to General Oglethorpe a large conical mound near Savannah, in which he said the Yamacraw chief was interred, who had, many years before, entertained a great white man with a red beard, who entered the Savannah River in a large vessel, and in his barge came up to the Yamacraw bluff. Featherstonhaugh, in his "Travels," speaks of the custom among the Osages, referring to a mound built over the body of a chief, called Jean Defoe by the French, who unexpectedly died while his warriors were absent on a hunting expedition. Upon their return, they heaped a mound over his remains, enlarging it at intervals for a long period, until it reached its present hight. Bradford says* that many of the *tumuli* formed of earth, and occasionally of stones, are of Indian origin. They are generally sepulchral mounds—either the general cemetery of a village or tribe, funeral monuments over the graves of illustrious chiefs, or upon a battle-field, commemorating the event and entombing the fallen, or the result of a custom, prevalent among some of the tribes, of collecting at stated intervals the bones of the dead, and interring them in a common repository. A mound of the latter description was formerly situated on the low grounds of the Rivanna River, in Virginia, opposite the site of an old Indian village (Jefferson's *Notes on Virginia*, pp. 100, 103). It was forty feet in diameter and twelve feet in hight, of a spheroidal form, and surrounded by a trench, whence the earth employed in its erection had been excavated. The circumstances attending the custom alluded to were, the great number of skeletons, their confused position, their situation in distinct strata, exhibiting different stages of decomposition, and the appearance of bones of infants. A mound of similar character, and constructed in layers of strata at successive periods, existed near the south branch of the Shenandoah, in the same State. A *tumulus* of stones, in New York State, is said to have marked the grave of a distinguished warrior (McCauley's *History of New York*, vol. ii., p. 239). Beck's *Gazetteer* (p. 308) states that "a mound of the largest dimensions has been thrown up, within a few years, in Illinois, over the remains of an eminent chief." The Natchez Indians, when expelled from Louisiana in 1728, erected a mound "of considerable size" near Natchitoches, as stated in the documents accompanying the President's message for 1806. C. C. Jones, referring† to plate xl. of the *Brevis Narratio*, says that "here we have a spirited representation of the ceremonies observed by the Florida Indians upon the occasion of the sepulture of their kings and priests. Located in the vicinity of the village appears a small conical mound, surmounted by the shell drinking-cup of the deceased, and surrounded by a row of arrows stuck in the ground. Gathered in a circle about this sepulchral *tumulus*, the bereaved members of the tribe, upon bended knees, are bewailing the death of him in whose honor this grave-mound has been heaped up." Jones also mentions an instance of a primary burial under a mound erected in honor of the dead, on the coast a few miles below Savannah, in which, along with an earthen pot, several arrow-heads, a stone celt, and bones of a human skeleton, was found in immediate association *a portion of an old-fashioned sword*. This *tumulus*, thus proved to have been erected since the advent of the Europeans, was seven feet high and about twenty feet in diameter at the base. Of the sword, the parts preserved were the oak handle, most of the guard, and about seven inches of the blade. The rest had perished from rust. The Mandans, according to Catlin (*North American Indians*, vol. i., p. 90), constructed mounds in commemoration of their dead; and the same is said of the Arickarees by Professor Lewis H. Morgan (Twenty-First Report of the New York State Cabinet). The mounds at Lanesboro', in the State of Minnesota, are said by the old Winnebago chief Winneshiek‡ to have been erected by the Sioux, in commemoration of a great victory won there over the Winnebagoes many generations ago. The same old chief, when shown a clay pipe taken from the Lanesboro' mounds, said it was like those made by the Sioux, and, pointing to an earthen spittoon for illustration, said the Sioux made many like it. In the *Proceedings of the American Association for the Advancement of Science*, for 1875, Dr. Sternberg, of the United States Army, critically analyzes the contents of certain mounds near Pensacola, Florida, and concludes that they were built by different but contemporaneous tribes of Indians, one being probably the Natchez. In these mounds were found pottery, red hematite for pigment, flint weapons, and shell ornaments in the shape of beads and perforated disks, in conjunction with *blue-glass beads and fragments of iron*. The latter show that these mounds were still used, or in process of erection, later than the advent of Europeans.

* *American Antiquities and Researches into the History of the Red Race*. 1841; p. 17.
† *Antiquities of the Southern Indians*.
‡ This old chief is still living, near Trempeleau, Wisconsin, and is said to be about one hundred years old.

Mr. E. G. Squier, in the second volume of the *Smithsonian Contributions to Knowledge*, has described in detail many mounds and earthworks of Western and Central New York, remarking that they extend down the Susquehanna as far as the Valley of the Wyoming, northward into Canada, along the upper tributaries of the Ohio, and westward along the shores of Lakes Erie and Ontario. These mounds and earthworks are said generally to be smaller than those in the Ohio Valley. They were found to contain ornamented pottery, pipes of clay regularly and often fancifully molded, or bearing the forms of animals, stone axes and hammers, stone disks and implements which the author remarks are almost identical in shape and material with some described by him from the mounds of the Ohio Valley, and spear-points and bodkins of bone. In connection with these are described articles of European manufacture, such as cast copper and iron axes, and kettles of copper, iron, and brass. Although Mr. Squier had previously expressed the opinion that the earthworks of Western New York were of like nature and origin with those of the Ohio Valley, when confronted with the fact of articles of European manufacture commingled with aboriginal, discovered by his own investigations, he was forced to assign the New York mounds to the Iroquois. It seems not unreasonable to assume that the New York series of mounds will be found undistinguishable from those of Northern Ohio and Eastern Michigan, which have unquestioningly been regarded as of the same age as those of the Ohio Valley, as well as synchronous with those of Wisconsin, which, while possessing all the essential characters of the Ohio Valley mounds, have been assigned as unhesitatingly to the existing races of Indians by the late J. A. Lapham, of Milwaukee.

It hence seems demonstrable, as well as admitted by some of the best American ethnologists, that the existing Indian races formerly carried on extensively and methodically the practice of mound-building. The mounds of sepulture are often referred to by historians and travelers. They were built by slow accretions. Not to mention the veneration which impelled the untutored savage to cast a handful of earth on a mound every time that he passed it, in testimony of his remembrance of the departed, it may be well to refer to what has been known as the *feast of the dead*. This is asserted to have been common to many tribes, although conducted with some variation of details. Gathering the bones of the dead from their temporary resting-places, the tribe assembled at a chosen spot, and with solemn ceremonies performed the last rites of sepulture. Sometimes they were placed in coffins separately, and buried in a pit over which was erected a mound of earth, and sometimes they were arranged serially, and simply buried under a mound. More frequently the bones were burned, the cremation being accompanied with lamentation and followed by feasting. The ashes and the unconsumed fragments were then covered with earth. For many generations this *feast of the dead*, which occurred sometimes every eight years, or every ten, or when the accumulated bones made it necessary, was doubtless performed on the same spot; and in course of time a mound of considerable dimensions was the result, which, while containing human bones, or fragments of them, and much evidence of fire in the form of ashes and charcoal and reddened stones, yet discloses, on exhumation, no perfect skeletons.

As further testimony to the erection of mounds by the present Indians, the statements and opinions of a few who have investigated the subject, or have dwelt long with them, may be referred to.

Mr. Jones, in his review of the *Antiquities of the Southern Indians*, remarks: "During the progress of this investigation, it will be perceived that mound-building, which seems to have fallen into disuse prior to the dawn of the historic period, was entirely abandoned very shortly after intercourse was established between Europeans and the red men." Again, in summing up the evidence, Mr. Jones says, in conclusion: "In a word, we do not concur in the opinion so often expressed, that the mound-builders were a race distinct from and superior in art, government, and religion to the Southern Indians of the fifteenth and sixteenth centuries." Bradford, in *American Antiquities and Researches*, affirms that "from very respectable authority it appears that many tribes still continue to this day to raise a *tumulus* over the grave, the magnitude of which is proportioned to the rank and celebrity of the deceased."

From the foregoing it appears that every known trait of the mound-builder was possessed also by the Indians at the time of the discovery of America. It hence becomes unnecessary to appeal to any other agency than the Indian. It is poor philosophy and poor science that resort to hypothetical causes when those already known are sufficient to produce the known effects. The Indian is a known adequate cause. The assignment of the mounds to any other dynasty was born of that common reverence for the past and for the unexplainable, which not only unconsciously augments the actual, but revolts at the reduction of these works to the level of the existing red man.

BRITISH EXPORTS OF IRON AND STEEL.

The Board of Trade has issued the following statistics of the exports of iron and steel from Great Britain to all foreign countries and to the United States for August:

	To all Countries.		To United States.		
	Aug. '81.	8 mos. '81.	Aug. '81.	8 mos. '81.	8 mos. '80.
Pig-iron	151,503	950,124	48,246	256,887	537,982
Bar, angle, bolt, etc	24,696	183,957	943	8,364	45,869
Railroad iron of all sorts	78,478	552,773	29,634	216,125	150,244
Iron rails	9,801	92,740	5,763	77,576	74,875
Steel rails	57,806	390,293	23,820	136,662	82,814
Iron hoops, sheets, and plates	30,135	189,905	7,058	23,782	35,979
Tin plates	21,700	155,514	16,641	113,512	110,291
Cast or wrought	23,587	188,108	516	4,220	11,932
Old iron	10,018	73,969	8,872	59,461	184,583
Steel, unwrought	14,245	93,864	11,719	74,814	31,670

The shipments of all kinds to all countries show an improvement on July as well as on the month of August during 1880 and 1879.

The shipments to the United States show a large improvement on July, and are almost double what they were for August 1879 and 1880. The item showing the greatest improvement is pig-iron, which is attributable to large purchases of Bessemer iron made by our mills recently, owing to the very low prices which prevailed.

THE ASSAY OF NATIVE SILVER ORES.

Written for the Engineering and Mining Journal by Francis A. Lowe, E.M., Batopilas, Mexico.

Batopilas, Mexico, and Silver Islet, Lake Superior, are the only localities on this continent where the ores are almost wholly of native silver. The native silver of Batopilas, from several veins, is nearly 900 fine, the silver occurring in a beautiful crystallized condition, and not unfrequently coated with its oxide, giving it a bright golden color. The silver of Silver Islet is not so fine, as a general thing, though it does occur equally fine, but mechanically mixed with huntilite, animikite, and macfarlanite, which are found in that mine. When the silver is chemically combined, as in minerals like galena, gray copper, or argentiferous pyrites, there is not much difficulty in determining the assay value per ton closely; but for such ores in which the silver is mechanically distributed in the sample, the assay can only yield approximate results. This is also true with rock carrying any of the rich chemical compounds of silver. Any one assay of such ores is not a fair test of its value; but the average of four assays, the samples for which have been taken in the following manner, will give results as closely correct as it is possible to obtain them, and as is required for smelting purposes. After the ore has been passed through a 100-mesh sieve, thoroughly mixed after sifting, and spread out thin upon a sheet of glazed paper and equally divided into four parts, the assay amount is taken from the same relative parts of these four quarters. The real difficulty, if there is any at all, is with the metallic scales, which will not pass through the sieve, as they form no inconsiderable part of the silver in the rock, concentrations, or tailings. To estimate their value in a ton is purely an approximation, *depending entirely upon the sampling of the ore* and the care taken by the assayer not to lose any of the particles. The differences, often great, in the assays of the Silver Islet concentrations obtained by the assayers at the mine, at the U. S. Mint in New York City, and at the smelting-works, were for a long time a source of much comment and controversy. They did not agree as to the quantity of silver in the same amount of ore from which the samples had been taken. The sampling at the mine and at the smelting-works in New York was carefully done, with the idea to make it as homogeneous as possible—to try to distribute the small particles of native silver equally throughout the sample. The assays made at the Islet mine were used as a check, but they were principally intended to furnish a basis for the estimation of the insurance on the ores in their transit from the mine to the smelters.

On arriving at the smelting-works, the same ore was carefully sampled, and half of the sample obtained was given to the assayer at the U. S. Mint, while the other half was retained at the works. The assays from the same sample seldom agreed—often the difference was very considerable. In order to settle all disputes, it was agreed by the company and the smelting-works that the average of the two assays would be a good basis to work upon; but it was soon discovered that the average did not give the true value of the ore. Sometimes it was in favor of the company, and often against the smelting-works. It was then determined upon, in order to settle every thing *in toto*, that when the excess of bullion product was in favor of the company, half of this excess was to be credited to the smelting-works; and that when the bullion product was less than the assay value, the company was only to receive one half of the discrepancy. Another arrangement, which is about the same, would be that the company keep a correct account of the excess in its favor, and the works of its loss. At the end of the run, add the two together, and take the average.

In estimating the value of such ore, concentrations, and tailings, the following method will be found to give a fair approximate value. As the sampling of such ore is the most important step in the determination of its value, too much care can never be considered useless. The ore as it comes from the mine is carefully weighed, and then passed through a crusher gauged to break it into pieces about the size of a walnut. After crushing, it is thoroughly mixed and spread out on a clean floor, in the shape of a square, and about four inches thick. At every foot, on each side of the square, parallel grooves of ore are taken out and put aside; the floor is then cleaned up, and the sample taken is spread out and treated in like manner. This is repeated until the required amount is obtained for a sample. This sample is carefully weighed and reduced to a coarse powder; the whole is then spread out on a clean surface and all the large pieces of native silver picked out, weighed, and credited to the sample. The coarse powdered residue is carefully sampled down to ½ lb., and stamped fine enough to pass through a 100-mesh sieve. The metallic scales left on the sieve are credited to the ½ lb. The siftings are thoroughly mixed and spread out thin upon a sheet of glazed paper and divided into four equal parts. Four assays are made of the siftings, each amount for each assay being taken as nearly as possible from the same relative parts of each quarter. The average of the four will give the average value of the siftings per ton. The metallic scales are mixed with assay lead and cupelled and the silver obtained weighed. In one half-pound of ore there are 227,229 milligrams; in $\frac{1}{10}$ assay ton, 2916; which, divided into the former, gives 77·81, or the number of assays which can be made from ½ lb. of ore. This number 77·81, divided into the weight of the silver button obtained from the scales, will give the weight of metallic scales or silver in each $\frac{1}{10}$ assay ton, which, if added to the weights of the four buttons obtained from the siftings, and each multiplied by ten and the results added together and divided by four, will give a fair approximate value per ton of such samples. The same result can be reached by simply multiplying the weight of the button obtained from the metallic scales in ½ lb. by 4000 and dividing by 31·17, the number of grams in a troy ounce. The result will be in troy ounces, which, if added to the average of the siftings, will give the value per ton. The large silver picked out from the original sample is smelted down in a crucible, refined, and weighed. If the sample weighed 100 lbs. and the silver obtained 10 lbs., 200 lbs. or 2916 ozs. must be added to the above result to obtain the approximate value per ton of rock. The whole assay is based upon the supposition that the 4000 half-pounds contain each the same weight of metallic scales, and that each of the 100 lbs. contains 10 lbs. of silver. If the ore is carefully sampled, the assay will give a fair approximate value, which, in conjunction with the arrangement noticed above with the smelters, will be sufficient for all practical purposes. The assay of the concentrations and tailings is precisely the same. An example will not be out of place, to show the simplicity of the method as compared with others.

After a careful sampling the 0·5 lb. of ore obtained, four assays of the siftings gave respectively the following weights of buttons:

I	48 mg.	+ 12·83 = 60·83 = 608·3
II	50 "	+ 12·83 = 62·83 = 628·3
III	51 "	+ 12·83 = 63·83 = 638·3
IV	49 "	+ 12·83 = 61·83 = 618·3
Average	49·5 "	+ 12·83 = 62·33 = 623·3

The metallic scales weighed 1000 mg. Now, 77 ÷ 1000 = 12·83 mg. to each $\frac{1}{10}$ assay ton; this added to each of the weights from the siftings gives an average of 62·33 mg. = 623·3 oz. per ton. The same result is obtained by multiplying 1000 mg. by 4000, and dividing by 31·17, and adding the result to 495, the average of the siftings: 495 + 128·3 = 623·3. The same result is also obtained, according to Prof. Ricketts's method, by dividing the average 49·5 mg. by 2916 mg., $\frac{1}{10}$ assay ton, and multiplying by 227,229 mgs. − 1000 mg. = 226,229 mgs.; or, $\frac{49·5}{2916} \times 226{,}229 = 3840$ mg. = total amount of silver in the siftings.

Therefore, 3840 + 1000 = 4840 mgs., total amount of silver in ½ lb.

Hence, $\frac{4840}{227{,}229} \times 29{,}166 = 623·3$ oz. per ton of such samples.

In assaying numerous samples of concentrations and tailings from these rich ores during a week, the above method was found by the writer to be the quickest way to obtain good approximate results.

I may add, in conclusion, that in treating such ores it is much better to erect a smelting plant at the mine, thereby saving all controversy and charges.

PROGRESS IN SCIENCE AND THE ARTS.

Gold Sand in British Columbia.—*Iron* states that a San Francisco company has begun treating the gold sea-sand of Cape Commerell, B. C., with a machine described as follows: It consists of six drawers or layers of plates covered with amalgam, and pierced with holes about a quarter of an inch in diameter. The gold-bearing sand is charged on the top plate, and water is turned on, setting the sand in motion. With the gold the sand falls through the holes from plate to plate, the former being amalgamated and attaching to the various plates. It is reported that the apparatus is successful.

Protecting Workmen against Heat.—It is becoming more and more recognized among employers that, if not from humane considerations, the betterment of the conditions under which workmen labor is advisable, because it pays. In our mines and metallurgical works, special devices are being introduced more and more, with encouraging results. Among the most recent efforts in this direction, we would cite the McDonald shield, for puddling-furnaces, and the arrangement recently made at the works of the Cambria Iron Company of Johnstown, Pa., to lessen the heat about the rolling-train and heating-furnaces at their rail-mill. Two 40-inch pipes conduct a current of air from a large blower on the outside of the building and discharge it down upon the workmen.

The First Porcelain Factory in the United States.—The first manufactory of translucent porcelain in the United States has recently been established in New Orleans by Mr. Eugene Surgi, who has engaged the services of Mr. d'Estampes, formerly director of a porcelain factory at Vierzan, France. The latter had already started the business in New Orleans in a small way, but was importing his kaolin from France, being ignorant that kaolin of the requisite quality could be obtained in this country. The firm of capitalists who took over the business of Mr. d'Estampes for the purpose of conducting it on a large scale caused a search to be made for the proper kind of kaolin, and ultimately found it in Robertson County, Texas, on the line of the Houston & Texas Central Railroad. The first batch of the new porcelain has just been drawn from the kiln, and is said to be excellent ware, though a little off color from the dampness of a new kiln.

Carbonic Acid in the Fluid Cavities of Topaz.—In an elaborate paper contributed by Mr. Alexis A. Julien to the American Chemical Society, he describes two simple and inexpensive apparatus for the microscopical determination of carbonic acid in the cavities of minerals; and a recent study of large numbers of cleavage slices from fifty pebbles of topaz from Minas Geraes, Brazil, has presented facts of some interest hitherto not recorded. In some of the slices, many extremely angular, elongated, branching, and even reticulated forms of considerable size and novelty abound. Their outline is at many points decidedly crystalline, with arms projecting at an angle of about 135 degrees, which seems to indicate that Brewster's generalization, that the cavities were generally "capriciously distributed when the substance of the crystal was in a soft or plastic state," may have been pressed too far. In general, the larger expansions of the cavities are mostly occupied by brine, while their attenuated extremities and fine tubular connections are filled by liquid carbonic acid, occasionally including a bubble due to contraction.

Powerful Magnets of Equal Strength.—M. Trouvé, of Paris, according to the *Revue Industrielle*, has made a series of experiments with a view to ascertaining the best steel for the manufacture of magnets, determining the most effective degree of hardening to be given to it, and choosing the most simple and practical method of rendering it magnetic. He has cut bars of steel lengthwise, magnetized them, measured their power, and then has hardened them and again magnetized them. After again measuring their power, he has found that it was increased, so that a magnet, after the second magnetizing, will bear a weight which is expressed by the square of the weight it was first able to carry, so that if it had a power of 2, 3, or 4 after the first operation, its capacity

would be increased to 4, 9, or 16 respectively after the second. As far as hardening is concerned, M. Trouvé has found, after numerous experiments, that it must be very regular, and he advises that manufacturers of steel for this purpose do the heating in a muffle heated by gas. In order to magnetize, he places the steel bars into two solenoids in juxtaposition, closing the magnetic circuit by means of two plates of soft iron. For generating the current, he employs a battery of six Wollaston cells. In this way, M. Trouvé has obtained magnets having a uniform power, his rod magnets carrying as high as 12 and even 14 times their own weight, while with horseshoe magnets it will rise to 48 or 56 times the weight.

The First Inventor of the Steamboat.—The French Academy of Sciences has taken pains recently to advance the claims of the Marquis of Jouffroy to the priority of invention of the steamboat, and the *Revue Industrielle* gives the following data on the subject to substantiate those claims: Claude de Jouffroy built his first boat propelled by steam at Baume-les-Dames, on the Doubs, without any other aid but that of a village smith. It was 40 feet long, and had a beam of 6 feet. Toward the bow, on each side, were two rods 8 feet long, attached to an axle, and at their lower end they carried feathering blades dipping into the water 18 inches. A single-acting engine, having a six-inch cylinder, was mounted amidships. The piston was connected with the rods of the oars by means of a chain and guide-rollers. When the piston was moved by the steam, counter weights carried the oars forward, the blades of the latter opened to offer the least resistance to the passage through the water. As soon as by the injection of cold water a partial vacuum was formed in the cylinder, the piston descended and the oars propelled the boat. Though successful, Jouffroy was much ridiculed, but, without being discouraged, had a large boat built in 1780, to navigate the Saône. It was 140 feet long, and had a 14-foot beam, but was propelled by a paddle-wheel making 24 to 27 revolutions per minute. It attained a velocity of 9 feet per second: and in the presence of great crowds it ran against the current of the Saône from Lyons to Isle Barbe several times in 1783. To prove that priority is due to Jouffroy, the following is quoted from a letter by Fulton, written in the course of a discussion, in 1802, brought about by the experiments of M. Desblanc, of Trévoux: "I will not compete in Europe; it is not on the rivers of France, but on the great streams of my own country, that I will carry out my navigation. Is it a question of who is the inventor? Neither M. Desblanc nor I imagined the pyroscaph. If the glory belongs to any one, the author of the experiments made in 1783 at Lyons, on the Saône, is entitled to it." Based on testimony, the French Academy of Sciences has expressed the wish that Claude de Jouffroy's achievements be held up to a grateful nation, and that his statue be erected at Besançon, in accordance with the intention of the municipality of that city.

Unexplored Regions in Europe and Asia.—M. Vénukoff, in the *Revue Scientifique*, affirms that, in Europe, the geography of Macedonia, Epirus, and Thessaly is far from exact, as was shown when the Conference of Berlin undertook to define the boundary between Turkey and Greece. Russia's northern provinces, from the frontier of Norway to the Ural Mountains, require thorough exploration, as does the northern part of the Ural Mountains; "the great *tundra* of the Samoieds" is wholly unexplored; and in Nova Zembla, the shore only has been examined, although geologists have to trace the probable connection with the Ural and with the Archipelago of Franz-Joseph Land. The portions of Asia on the Kara Sea and the Arctic Ocean, including the basins of the Khatanga and Anabara, although the old notions concerning them have been shown to be incorrect by the voyages of Tchékanovsky and Nordenskjöld, "are still only hypothetically represented on our maps." Extensive regions east of the Lena have never been visited by Europeans. The country of the Tchouktchis has never been scientifically examined, as is the case also with the extreme northeast peninsula north of the Gulf of Anadir. The mountainous, desert country of the Koriaks might yield a rich harvest to the naturalist. Kamtchatka needs an accurate survey, and invites the geologist, the botanist, the zoölogist, and the ethnologist. On the other side of the Sea of Okhotsk, there are to be explored the northern part of the island of Saghalien; the mountain chain rising between the Strait of Tartary and the valleys of the Amoor and Oosoori; Manchooria; the mountains dividing Corea from China; and "the forbidden land" of Corea. Great spaces in China may be called unknown lands. The river systems of Eastern and Northern Thibet present interesting problems. Is the chain of the Kuen-Lung "worthy to be ranked with the Himalaya and the Thian-Shan systems?" The southern part of Eastern Toorkistan deserves equal attention with Thibet. The sources of the Hoang-Ho "are of exceptional interest." Is the great desert of Gobi crossed by a chain of mountains connecting the eastern end of the Thian-Shan with the In-Shan? No naturalist has visited Northern and Northeastern Mongolia; and only three or four European travelers have crossed the Kingan range between Mongolia and Manchooria. In China proper, as our maps present it, we have "chains of hypothetical mountains;" there is work for the anthropologist and linguist in the southwestern provinces of China, "which are filled with aborigines not of Chinese origin;" and in Indo-China, the origin of immense rivers is still to be traced. Much remains to be known concerning Japan and the archipelagoes of the Pacific. Important parts of Afghanistan and Beloochistan await scientific exploration. Fuller geographical knowledge is required of the southern parts of Toorkistan. The Oasis of Merv has never been visited by a scientific traveler. Toorkoman geography demands the discovery of the ancient beds of the Oxus and its affluents. Although Western Persia has been fairly mapped, there is much to be done concerning the southern part and the interior of the country. M. Vénukoff's tour brings him back to Turkey—"only on the southern instead of the northern side of the Hellespont and Bosphorus." Are these straits traversed by a single current, carrying the waters of the Black Sea into the Mediterranean, or by two currents, "one superficial and running to to the west, the other submarine and directed toward the east?—a question that may have a bearing on the future of the countries east of the Black Sea." Those who may wish to read the paper of M. Vénukoff, will find it in the *Popular Science Monthly* for September.

AN IMPORTANT LAND SUIT.—A dispatch from Santa Fé, N. M., states that a suit was filed in the First Judicial District Court of the territory to remove the Cañon de l'Agua Company, a strong Boston company, from the grant which it now occupies, forty miles from Santa Fé, on the ground of a fraudulent survey. The case is one of great importance, involving valuable property upon which the Cañon de l'Agua Company is reported to have expended nearly a million dollars in development.

GENERAL MINING NEWS.

ARIZONA.

As expected, the Indian troubles have had a serious effect, notably on mining in the Globe District, where, according to the *Chronicle*, the excitement caused the temporary suspension of all work. The Mineral Creek mill, the same paper informs us, was shut down for a few days, there being no fire-arms available. With the exception of two or three men left to guard the mill, all the hands went to Globe. There is nothing new from the Oro Blanco District. From the Silver District comes the report that a strike has been made in the Lost mine, a property belonging to Chicago parties. What the local papers are pleased to call a shaft is now 12 feet deep in a vein reported to be 60 feet wide. The pay-streak shows a width of 6 feet, with an ore-seam of black sulphurets and gray carbonates of from 4 inches to 2 feet. A correspondent of the Tucson *Journal* gives the following assays, which we quote because they show exceptional candor in not being confined to picked samples alone. No. 1, black sulphurets, $1410.93; No. 2, unassorted dump, $11.31; No. 3, waste dump, $9.42. No statement of the quantities is given.

PECK DISTRICT.

BLACK WARRIOR.—The manager writes under date of the 12th inst.: I have commenced breaking down the ore-body recently struck in the new or fourth level, and feel much elated over the grade of the ore, which is chiefly composed of the richest galena, with much native silver. The ore-body is 18 to 20 inches in width, and growing larger as we go down. I strongly advise sinking an additional 100 feet at once, as the prospects in depth are most encouraging. When first struck, this ore-body averaged $125 in silver across the entire face; but as the body is penetrated, the assays have continued to improve.

TOMBSTONE DISTRICT.

Although it is estimated by the Tombstone *Epitaph* that during the month of August the Head Center, Western, and Grand Central mills lost each at least ten days and the Tombstone six, and although the rains in the beginning of the month had the effect of curtailing the output of the mines, the returns show an increase over the month of July. The *Epitaph* gives the following figures for the month of August:

Tombstone M. and M. Co. (official)	$151,975.00
Western, Contention (official)	105,593.92
Grand Central (approximate)	95,600.00
Vizina (official)	81,216.00
Head Center (official)	20,232.00
Boston Mill (other than Vizina ore)	8,387.77
Total	$462,225.01
Product for July	432,832.83
Excess over July	$29,392.18

This increase is accounted for by the *Epitaph* by the great richness of the ore milled. It cites as an example the Vizina, which had worked at the Boston custom mill 780 tons of ore averaging $104.12 per ton, or $81,216 in all. The Grand Central has become a dividend-paying mine, having paid a 50c. per share dividend in July and a similar amount in August, aggregating $100,000. Prospecting and extraction is going on regularly at the various mines, and at the Silver Belt work has been resumed, after several months of litigation. Professor Church has left Tombstone temporarily for his health.

CALIFORNIA.

THE BODIE DISTRICT.

The Bodie *Free Press* gives the following news of interest: Work was resumed in the University and Spaulding mines, after a long suspension. An experiment which, if successful, will, it is thought, be largely imitated, is the use of two Frue vanners at the Oro Company's 5-stamp Silver Hill mill.

BODIE CONSOLIDATED.—There were 106 962 tons of ore hauled to the mill during the week ending the 10th inst., and 106 697 tons were crushed. The average assay value of the pulp was $53.24, and of the tailings $10.06 per ton. The shipment will be $6283.77. The north drift No. 3, 6th level, is now 128 feet in length, having been driven 8 feet since last report. The vein is somewhat broken. Winzes Nos. 6 and 9 have each been sunk 6 feet, so that the former is 58 and the latter 31 feet in depth. In these winzes, the hanging-wall is very firm and regular; but the foot-wall of the vein is more or less broken, and seams of quartz, sometimes very rich in gold and silver, run down into it from the vein above. On this account, the winze will be driven on the foot-wall of the vein, instead of on the hanging-wall as heretofore.

STANDARD CONSOLIDATED.—The *Free Press* calls attention to the fact that this company is again sinking the main shaft, which is down 1062 feet. The superintendent officially reports as follows: During the week ending September 10th, we extracted and shipped to the mills 1261 tons of ore from the 300, 385, 500, and 550-foot levels. The average pulp-assay for the week is $33.12; crude bullion received, 4502 ounces; and the amount shipped to the company, $47,359.09.

EUREKA.—The Georgetown *Gazette* of September 2d contains the following about this El Dorado County mine: Work at extracting ore in the Eureka has been temporarily suspended, but the pump is kept running. The work of prospecting the mine has been carried to a satisfactory point. The body of ore is immense, ranging from 20 to 30 feet in width. It is, however, of low grade. Between 50 and 60 tons of this quartz have been thoroughly tested, and enough is learned to know that the Eureka will pay if the proper reduction-works are put up. This is now the matter for consideration by the company in New York during the next two or three weeks. From the best we can learn, the rock averages about $4 in free gold per ton, and the sulphurets, $60 per ton, it requiring about 12 tons of ore to produce one of sulphurets.

SOUTH HITE.—The superintendent telegraphs that the cross-cut in the hanging-wall on the 200-foot level has cut into high-grade ore, running from $40 to $60 per ton. The 300-foot level is still in low grade, but improving.

COLORADO.

GILPIN COUNTY.

RARA AVIS.—A reporter of the *Register-Call* has visited this property and states that the management is pushing development-work, sinking No. 1 shaft to the 400-foot station, driving the east 300-foot level, sinking an air-shaft on the Whitney vein east of No. 1 shaft to connect with the 300-foot level, and driving that level to the surface, through which all the ore from and below the 300-foot station will be trammed to the surface. These explorations are going forward as rapidly as men and means will permit. The 300-foot level is now in from the shaft a distance of 80 feet, the showing of mineral in the heading of the level being fully 30 inches in length. The trend of the ore-chute dips to the west, indicating that before the present contract of sinking 50 feet in the working-shaft is completed, this body of ore will be cut into.

The vein-matter of the Whitney above the 300-foot levels, both east and west from the shaft, is of too low grade for profitable treatment at the smelters, but when concentrated, as from three or five tons into one, it will pay a fair profit for treatment. The company has secured a plot of ground upon which will be erected within the next thirty days concentration-works for the handling of its own ore. By the date of its completion, the mine will be developed to such an extent that a daily output of 50 tons can be relied upon—a sufficient amount to keep the works in constant employment.

LAKE COUNTY.

The Leadville mines appear to show little change during the week, according to reports received through our exchanges. It is reported that the Crescent is improving.

EVENING STAR.—This mine has just declared its seventeenth dividend of $25,000, or 50 cents per share. The mine is well developed, and, according to the *Herald*, the reserves are large.

DUNKIN.—The *Herald* has the following: Since the cave occurred in the north workings of the Dunkin, the company has mostly confined its work to the south shaft. A short time ago, a lease of the mine was made to Harry Slackett, superintendent on the Amie and Climax, Thomas Smithem, formerly superintendent on the Dunkin and now of the Matchless, Lou C. Leonard, manager of the Matchless, and others. By the terms of the lease, the owners receive $2500 a month.

HIBERNIA.—The manager, Mr. L. C. Leonard, has discharged all employés and shut down the mine completely. The *Herald* says that the north workings have not been worked for some time past, as the ore-body from which so great an amount has been extracted, in that portion of the mine, is supposed to be about exhausted. Work on the May Queen shaft has, however, been constantly prosecuted, and a depth of two hundred and eighty feet has been reached. The indications at the bottom of the shaft are such as to warrant great expectations regarding the property, but, as yet, to yield no profits. Notice has been given to the New York office, and directors, of the necessity for having funds furnished for continuing work, but, as no money has been sent forward, and the mine was continually running in debt, there was but one course left, and that was to suspend operations until the necessary funds should be furnished. There now exists, against the company, a debt of $15,000, which amount was borrowed to pay the balance required for the last dividend.

LITTLE PITTSBURG.—The acting superintendent writes, September 10th, that work in No. 6 Pittsburg has been discontinued, as there is no indication of ore. No. 2 is about the same. The north end of the New Discovery is cooling slowly. When the Chrysolite mine opens Nos. 1 and 3, it is believed the Discovery will cool rapidly.

MATCHLESS.—The *Herald* reports that in an uprise near the Robert E. Lee line a large body of ore was found, which yields from 200 to 500 ounces of silver to the ton.

CARBON CREEK COAL.—A correspondent of the Denver *Mining Gazette* reports that the Richardson Mount Carbon Coal Company has been formed to work a coal property of 640 acres located on Carbon Creek, 18 miles north of Gunnison City, on the line of the Denver, South Park & Pacific Railroad, and one mile and a half from the Denver & Rio Grande Railroad. The property is reported to contain a five-foot vein of semi-bituminous coal, cropping out some 30 feet above the creek, and dipping into the mountain 30 degrees.

DAKOTA.

From Deadwood it is reported that snow fell on the 6th inst., which will aid much in supplying the ditches that convey the water to the mills of the mines of the upper camps. There had not been water enough for some time to keep all the stamps dropping, and it was becoming less every day. The Deadwood *Times* expresses the hope that no more mills will be standing idle.

FATHER DE SMET.—The superintendent, under date of September 3d, writes to the secretary of the company as follows: In regard to the construction of the additional 20 stamps, I have to report that the machinery is all in place. We have laid a new floor throughout the whole mill, and are repairing the two old boilers, which will take ten days. In the mean time, we are running 40 stamps or one side of the mill, while on the other side we are putting all the shafts in line, rebabbitting the boxes, etc. I purchased from the Portland Mining Company four new mortars for $1400, two of which will have to be put in place of two of the old mortars immediately. In fact, we are giving the mill a thorough and complete overhauling needed. I am in hopes to drop the 100 stamps on the 16th inst. The north end tunnel is progressing rapidly, having advanced 78 feet during the month of August, making a total of 128 feet to September 1st. The rock is quite hard. The contractors work three shifts of eight hours each, two men on a shift. The winze from second to third level under the Eureka chamber is going forward in a body of good ore. We are running a tunnel south from the McGinty chamber, which we are in hopes of cutting a large body of ore in. At present, we are mining no ore from the large open cut. I have opened a cut higher up the hill near the south end of the company's claims, also one lower down the hill, both of which show large quantities of fair ore. Our clean-up for last half of August was 1105 ounces retorted gold. The mill was idle during the time a day and a half, on account of new wrist-pin. The report of the superintendent, from September 8th to September 15th, level, 45 tons; shows ore extracted from first level, 600 tons; second level, 400 tons; third a total of 1045 tons; ore milled, 1045 tons.

MICHIGAN.

The Marquette *Mining Journal* has the following:

An important event in the history of iron mining on Lake Superior took place at Ishpeming, in the striking of the ore at the bottom of A shaft of the Barnum mine. The sinking of this shaft marked a new era in mining in this district. Heretofore only such deposits of ore were discovered and mined as were at or near the surface of the ledges. The vein of ore which the miners came upon lies about 450 feet below the surface. The ore was discovered there with a diamond drill three years ago. The shaft, which has penetrated to the ore, was begun in December, 1879. It is the greatest depth at which an ore-deposit has been tapped in this entire region. The expense of sinking this deep shaft has been very great, and much more money will have to be expended before the opening will be in condition to yield ore in any thing like paying quantities. It is only such a company as the Iron Cliffs, which has the means and energy to push an enterprise of this magnitude, that could undertake to open an iron mine nearly 500 feet below the surface. B shaft, on which work has been suspended for some time, will now be pushed downward as fast as possible. This shaft is located 500 feet west of A, and it is expected to reach the ore there at a less depth than in the latter.

MONTANA.

ALTA-MONTANA.—The superintendent reports the production of the Alta mine for 30 days ending September 3d, in prospecting principally, to be 458 tons, assaying $108 per ton, silver, and 37 per cent lead. Total value of both metals, for the month, $63,225.

BUTTE DISTRICT.

The Butte *Miner* reports the following:

ANSELMO.—Lacaff's lease of the Anselmo runs about eight months yet, and it is currently reported that he has sold the remaining time for working the Anselmo mine, which expires next March, for the sum of $20,000.

MOOSE.—The Moose mine, which lies a short distance from the east end of the Magna Charta mine, has been bonded for the sum of $75,000, the bond running for the space of 90 days. The owners of the Moose, Messrs. Farrer, Johnson & Co., have bonded the mine to S. Longmaid & Co., who, it is supposed, are operating for Eastern capitalists. The Moose mine has produced good ore, and has been worked to the water level, beyond which point it will be necessary to use a pump and hoisting machinery. We are not informed of the intentions of the bonders, but it is reported that steam machinery is to be placed on the mine.

NEVADA.

THE COMSTOCK LODE.

The Gold Hill *News* publishes the following as its usual weekly summary, under date of September 14th:

There is not any work doing in the bottom of the joint Sierra Nevada and Union Consolidated winze. A drift is running from this winze on the 2700 level that is supposed to have run into stringers of ore, or into a small-sized ore-body. The supposition is indulged in by outsiders, and it is doubtful if they know much about it. Senator Fair is not yet inclined to unbosom himself; and until he does speak or permit mining experts to examine the reported strike, there will be nothing definitely known as to what the mine contains. It is to be hoped that the rise in stocks is justified by the condition of the mine. If such is the case, there has been plenty of time to discover the fact, and it should be made known. The San Francisco press aptly remark that "it is only the brokers doing business strictly on commission that look happy; the bulls fear the movement is but a deal, liable to go back on them at any moment, while the bears have already had their paws nipped, and are now standing back wondering at the mystery surrounding the boom." The only work carried on in the bonanza series of mines the past week has been repairing. It is expected that the old force of workmen will be back in a day or two, however. It was owing to the intense heat in the mines that the workmen were removed, but the ventilation is now rapidly improving. The Savage management promises to begin the extraction of low-grade ore shortly. Considerable attention is attracted toward Chollar and Potosi. A cross-cut is running in the latter mine, which is in kindly formation. A similar drift will be started in Chollar before long. Preparations are making to work the Alpha joint with Imperial. Belcher has got to work at extracting low-grade ore again, and will shortly be followed by Crown Point. The joint shaft of these two mines will be repaired by Monday next. The Justice Mining Company announces its intention to resume work shortly, and has levied an assessment of twenty five cents per share to secure that end. It proposes to work its mine through the Alta shaft.

SIERRA NEVADA.—The reports of a strike in this mine are very contradictory and unsatisfactory. The Gold Hill *News* seems very doubtful on the subject, and under date of September 10th has the following: All that could have possibly given rise to the report of a rich body of ore in the Sierra Nevada is the fact that the joint Sierra Nevada and Union Consolidated winze ran into a stringer of ore about fifteen feet below the 2700 level. It amounts to nothing greater than a dozen or more like stringers encountered in the same winze from the 2400 level down.

MORNING STAR.—A telegram from G. E. Hutchinson, President of the Dahlgren Mining Company, now at the mine, is as follows: The incline is 105 feet below the tunnel. The vein is four feet wide, and the ore in the bottom of the incline is full of free gold.

STARR-GROVE.—The following is officially reported: A new shaft will be started from the croppings, 500 feet south of the old shaft, to enter the new ore-chimney recently discovered, which is exceedingly rich. The incline on the old ore-chimney is sinking rapidly in fine ore. Thirteen bars of bullion were shipped from the mine on September 16th. A Battle Mountain (Nev.) dispatch to the Mining Associated Press says: A rich strike has been made in the new drift which was lately started in the Starr-Grove mine. It consists of a large body of blank metal, which is full of ruby silver and sulphurets, and assays high. In the different tunnels and drifts, fine ore, which shows strength and permanency, is encountered. This body is increasing in size as they run west on it. The new incline shaft is in a fine body of rich ore, and excellent progress is making with the work.

NEW MEXICO.

SANTA RITA.—The Las Vegas *Mining World* states that a forty-stamp mill is to be placed at the Santa Rita mines, which will be modeled after the Michigan stamps. Fully 250 men are to be employed at these mines when in full operation. Two hoisting engines for the mines are already on the ground. One of them is now in operation. These engines are erecting on the Guadalupe (locally known as the Chino) and the Romero, the principal mine near the Santa Rita works. A hoisting-engine will be erected on the Carrasco, on the opposite side of the gulch, later in the season.

PROPOSALS AND SALES.

For the benefit of many our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

The Consulate General of Brazil in the United States will, during the next fifteen days, receive proposals for supplying Railroad Material wanted for the Sobral Railroad in the Province of Ceara, Brazil. Further particulars can be had on application to the Brazilian Consulate General, No. 71 Broadway, Room No. 62, New York City.	
Dredging the Channel on the South Side of Pier No. 2, Wallabout Basin, Brooklyn; Department of City Works, Municipal Department Building, Brooklyn, N. Y.	Sept. 29, 1881.
Clearing, Close Cutting, Grubbing, and Grading of that portion of the Sault Ste. Marie Branch, extending from near Algoma Mills, on Lake Huron, easterly to a point near the north side of Spanish River, a distance of about 60 miles. The work to be tendered for in three sections of about 20 miles each; Charles Drinkwater, Sec. Canadian Pacific Railroad Company, Montreal, Can	" 30,
Construction of the Iron Work of Three Light-House Towers for the Tenth Light-House District, to be delivered at Cape Vincent, New York; Office of Light-House Engineers, Third District, Tompkinsville, Staten Island, N. Y.	Oct. 3, "
Graduation, Masonry, Bridging, Cross-Ties, and Track-Laying of 33 miles of the Baltimore & Drum Point Railroad, from the City of Baltimore to Mount Zion, in Anne Arundel County; Baltimore & Drum Point Railroad Office, 158 West Fayette Street, Baltimore, Md.	" 10, "
Construction of the Toronto & Ottawa Railroad, from Madoc to Sharbot Lake (on the Kingston & Pembroke Railroad), about 47 miles in length; Toronto & Ottawa Railroad Company, 42 Front Street, West Toronto, Can.	" 10,
The Mines, Minerals, and Mining Rights of the Laurentian Phosphate Mining Company (Limited) will be sold at the Rooms of John J. Arnton, 91 St. James Street, Montreal, Canada, at 11 o'clock	" 11,
Construction of a Bridge across the Potomac River at Three Sisters about 3100 feet above the present Aqueduct Bridge at Georgetown, D. C.; and also for the Construction of a Bridge on a Section of the River about 500 feet above the said Aqueduct Bridge; U. S. Engineer's Office, 1907 Pennsylvania Avenue, Washington, D. C.	" 15, "
Dredging in Passaic River, between Newark Bay and Pennsylvania Railroad Bridge, and Dredging in Rahway River, N. J.; G. L. Gillespie, Major of Engineers, Room 59, Army Building, corner Houston and Greene Streets, New York City	" 18, "
Construction of the necessary Foundations, Masonry, Superstructure, and Approaches of a Highway Bridge to be built across Cumberland River at Nashville, Tenn.; Bridge Committee, Nashville, Tenn.	Nov. 1, "

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount per share of last.	DIVIDENDS. Total paid to date.	DIVIDENDS. Date and amt. per share.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE. Sept. 17. H.	Sept. 17. L.	Sept. 19. H.	Sept. 19. L.	Sept. 20. H.	Sept. 20. L.	Sept. 21. H.	Sept. 21. L.	Sept. 22. H.	Sept. 22. L.	Sept. 23. H.	Sept. 23. L.	SALES.
Alice, s. c.	Mon	3,000	10,000,000	400,000	25	*		280,000	Sept. 1881 10			6.63	6.50	6.25						6.25		1,000
Amie Con. s.	Col.		5,000,000	500,000	10	*		305,000	May. 1880 10	.35		.36	.35	.33				.33	.30	.32	.26	19,500
Argenta, s.	Nev	1,500	10,000,000	100,000	100	140,000	Sept. 1881 10	40,000	Feb. 1880 20													
Barbee & Walker, s.	Ut'h		1,000,000	100,000	10	*		60,000	Nov. 1880 10													
Bassick, g. s.	Col.		10,000,000	100,000	100	*		25,000	Feb.. 1880 25													
Belle Isle, s.	Nev.	1,500	10,000,000	100,000	100	45,000	June 1881 15	300,000	Dec. 1879 25			.15	.14							.15		400
Belcher, g. s.	Nev.	1,040	10,000,000	104,000	100	2,328,000	Apr. 1881 75	15,397,200	Apr. 1876 75							3.25						200
Bodie Cons., g	Cal.		10,000,000	100,000	100	75,000	May. 1879 1 00	1,200,000	Mar. 1880 25			8.25				8.38	8.25	8.25	8.00	8.00		450
Breece	Col.		5,000,000	200,000	25	*		2,000	Feb.. 1880 01									.75				500
California, g. s.	Nev.	600	54,000,000	540,000	100	162,000	June 1881 30	31,320,000	Dec.. 1879 50	1.05	.99	1.05	.97	.99	.98	1.05	.95	.97	.96	1.00	.97	11,815
Calumet & Hecla, c.	Mch		2,500,000	100,000	25			19,850,000	Aug. 1881 5 00													
Caribou Con., s.	Col.	1,400	1,600,000	100,000	10	*		50,000	Mar. 1880 10													
Catalpa, s. L.	Col.		3,000,000	300,000	10	*		180,000	May. 1881 20													
Chrysolite, s. L.	Col.		10,000,000	200,000	50	*		1,400,000	Oct.. 1881 50	7.38	7.00	7.50	7.13	7.13		7.38	7.00	8.13	7.38	8.00	7.75	9,015
Climax, s. L.	Col.		2,000,000	200,000	10	*		180,000	Aug. 1880 30	.43		.43	.41			.40				.40	.38	2,400
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	573,200	Aug. 1881 30	42,930,300	Aug. 1880 50	2.40	1.90	2.55	2.05	2.50	2.20	2.25	1.80	2.25	2.10	2.30	2.20	15,761
Copper Knob, c.	N.C.		1,000,000	1,000,000	1	*		15,000	Nov. 1880 02	.09	.08	.09	.08			.09	.08	.07		.08		19,900
Copper Queen	Ariz		2,500,000	250,000	10			75,000	Sept. 1881 10	6.63												100
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	2,573,370	Sept. 1881 0 75	11,588,000	Jan.. 1875 2 00													
Deadwood-Terra g.	Dak		5,000,000	200,000	25			†480,000	Sept. 1881 20	6.25	5.50											250
Dunkin, s. L.	Col.		5,000,000	200,000	25	*		200,212	June 1881 7½	.50								.50				70
Eureka Cons., g. s. L.	Nev.		5,000,000	50,000	100	100,000	May. 1876 1 00	4,730,000	Sept. 1881 50			27.50	27.00			26.50						270
Excelsior W'k'r & M. Co	Cal.	525 acres	10,000,000	100,000	100	100,000	June 1881 1 00	850,000	Sept. 1880 25							1.50						300
Exchange, s.	Nev		1,000,000	100,000	10	*		350,000	Aug. 1881 03													
Evening Star, s. L.	Col.		500,000	50,000	10	*		400,000	Sept. 1881 50													
Father de Smet, G.	Dak		10,000,000	100,000	100			340,000	July. 1881 50							7.50						60
Findley, G.	Geo.		200,000	200,000	1	*		8,000	May. 1879 1c	.38		.28	.27									1,100
Freeland, s.	Col.		5,000,000	200,000	25	*		50,000	May. 1883 25													
Glass Pendery, s. L.	Col.		5,000,000	250,000	20	*		50,000	May. 1881 10													
Gold Stripe, G.	Cal.		1,500,000	150,000	10			93,000	July. 1881 15							.85		.75				200
Gould & Curry, g. s.	Nev.	612	10,800,000	108,000	100	3,314,000	July. 1881 50	3,826,800	Oct.. 1870 10 00							7.63						50
Grand Prize, s.	Nev.	1,500	10,000,000	100,000	100	315,000	July. 1881 25	450,000	Sept. 1880 0 25	.50		.40										500
Great Eastern, G.	Dak	1,200	300,000	300,000	1	*		16,000	July. 1880 01	.18	.17	.17		.17		.17		.17	.16	.17	.16	15,400
Green Mountain, G.	Cal.	4,350	1,250,000	125,000	10	*		192,550	Sept. 1881 7½									5.25		5.50	5.00	3,800
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	3,688,000	July. 1881 50	1,598,000	Apr. 1871 5 00													
Hibernia, s. L.	Col.		7,500,000	300,000	25	*		180,000	July. 1881 10	.40	.37	.40	.37	.38		.38	.35	.37	.32	.34	.32	69,200
Homestake, G.	Dak		10,000,000	100,000	100	200,000	Apr. 1878 1 00	1,110,000	Sept. 1881 30													
Horn Silver, s. L.	Uth.		10,000,000	400,000	25	*		200,000	Jan.. 1880 25			15.00				15.25	15.00	15.38	15.13			800
Hukill, g. s.	Col.	3,288	1,000,000	200,000	5	*		210,000	Dec.. 1878 10			.80						.78	.74			500
Independence, s.	Nev.	1,500	10,000,000	100,000	100	170,000	Aug. 1881 0 15	225,000	Sept. 1879 25													
Indian Queen, s.			250,000	12 ,000	2		Feb.. 1880 15	278,500	Sept. 1881 05													
Inyo	Cal.		500,000	100,000	5	*		15,000	Sept. 1881 05													
Iron Silver, s. L.	Col.		10,000,000	500,000	20	*		300,000	Aug. 1881 20	2.55	2.50	2.60	2.40	2.50	2.40	2.55	2.50			2.50	2.45	9,025
La Plata, s. L.	Col		2,000,000	200,000	10	*		300,000	Sept. 1881 7½													
Leadville Cons., s. L.	Col.		4,000,000	400,000	10	*		150,000	Jan.. 1880 15			1.45	1.25	1.45		1.50	1.35			1.40		3,075
Leeds, s.	Uth.	3,000	6,000,000	60,000	100	51,000	June 1881 25	78,000	Oct.. 1878 15													
Little Chief, s. L.	Col.		10,000,000	200,000	50	*		700,000	Aug. 1880 50	1.45	1.35	1.40	1.35	1.40	1.35	1.40	1.35	1.35		1.35	1.30	4,700
Little Pittsburg, s. L.	Col.	30 acres.	20,000,000	200,000	100			1,350,000	Mar.. 1880 50	2.75		2.75	2.60					2.75		2.75		675
Martin White, s.	Nev.	22,900	10,000,000	100,000	100	875,000	June 1881 25	90,000	July. 1879 50							1.40						100
Moose, s.	Col.	39,000	2,000,000	200,000	10	*		550,000	Mar. 1878 25	.83		.80										200
Navajo, s.	Nev.	500	10,000,000	100,000	100	200,000	Aug. 1881 0 25	25,000	Mar. 1881 25	.65												100
N. Y. & Colorado, G.	Col.		1,000,000	50,000	20	*		25,000	July. 1879 10													
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100			1,987,500	Sept. 1881 75	15.50				13.50	12.75	12.75	12.00	12.50	11.75	14.00	12.50	2,600
North Belle Isle, s.	Nev.	1,500	10,000,000	100,000	100	25,000	Feb.. 1880 15	15,000	Sept. 1880 15													
Ontario, s	Uth.	3,000	10,000,000	150,000	100			3,725,000	Sept. 1881 50													
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,092,600	Mar. 1881 1 00	1,693,200	Jan.. 1880 1 00	8.25		7.50				8.50				8.13		315
Olympus, g.	Cal.		1,000,000	100,000	10	*		151,000	July. 1879													
Quicksilver, Pref.	Cal		4,251,300	42,913	100			366,954	Aug. 1881 9 25	61.00	60.50			61.50								700
Quicksilver, Com.	Cal		5,708,700	57,087	100			128,446	Aug. 1881 2 25	14.50										14.00		125
Rising Sun, s	Cal.		750,000	150,000	5	*		101,250	May. 1881 7½			2.00										500
Robinson Cons, s. L.	Col.		10,000,000	200,000	50	*		425,000	Sept. 1881 50	13.00	12.75	13.13	12.75	12.88	12.63	13.38	12.88	13.50	13.25	13.50	13.00	12,440
Savage	Nev.		11,200,000	112,000	100	5,384,000	Sept. 1881 50	4,480,000	June 1869 3 00													
Seaton, G. S.	Col.		50,000	50,000	1	*		10,000	May. 1877 10													
Sierra Nevada, G. S.	Nev.		10,000,000	100,000	100	4,650,000	July. 1881 1 00	102,000	Jan. 1871 1 00	26.50	25.00	25.00	23.00	20.50	19.50	21.00	19.00	21.00	20.75			2,695
Silver King, s.	Ariz	3,650	10,000,000	100,000	100			725,000	Aug. 1881 25											19.13		100
Spring Valley, G.	Cal.	1,500	200,000	200,000	1	*		50,000	Jan. 1881 5	2.70				2.25				2.50				250
Standard, s. G.	Cal.		10,000,000	100,000	100	50,000	July 1878 1 00	3,000,000	Sept. 1881 75	21.63	21.00					22.25	21.00	22.50		21.50	21.00	911
Starr-Grove, s.	Nev.		2,000,000	200,000	10	*		16 ,000	June 1881 10									5.00				200
Stormont, s.	Uth.		200,000	200,000	1	*		145,000	Oct.. 1880 05	2.85				2.75				2.75				500
St. Joseph, L.	Mo..	7000 ac's	1,000,000	100,000	10	*		230,000	Sept. 1881 20													
Tip Top.	Ariz		10,000,000	100,000	100	120,000	Mar. 1880	60,000	Sept. 1881 20							5.50						100
T mostone, s.	Ariz		12,500,000	500,000	25	*		95 ,000	Sept. 1881 10													
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	4,008,000	May. 1881 1 00	2,184,000	Aug. 1871 2 50													

G. Gold. S. Silver. L. Lead. C. Copper. * Non-assessable. † The Deadwood mine paid in dividends, previous to the consolidation, $275,000, and the Golden Terra paid $75,000.
Total shares of Dividend Paying stocks sold during the week, 213,082.

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Sept. 23.

Owing to the death of the President, the exchanges did but very little business on Wednesday, and since then there has been a check to speculation which will not be recovered until after Monday. The sales for the week aggregate but 602,723 shares. In most instances, there have been declines, about the only exceptions among the prominent stocks being two or three of the Leadville mines. After Monday, a renewed interest will be taken in mining, and a very active speculation may be looked for this fall and winter.

The Tuscarora stocks have been quiet and without feature.

The Comstock shares have been moderately active, but very weak. California and Consolidated Virginia have had a very fair business at slight changes. Sierra Nevada, under a very fair business for this market, declined from $26½@$19½. Union, although not so active, declined from $17½@$12¾. Sutro Tunnel has been quiet and weak.

The Bodie stocks have been very quiet. Bodie, on a very small business, settled to $8. Standard, under sales of only 911 shares, declined from $22¼@$21.

Amie has been quite active, but to-day became very weak, declining to 26c. Chrysolite continues to attract a great deal of attention. The sales have been 9015 shares at $7@$8¼. The price of the stock is still strong. Hibernia, under a large business, declined to 32c. Horn-Silver, under a moderate business, was strong at $15@$15¾. Iron Silver has been moderately active and very strong at $2.40@$2.60. Little Chief shows a moderate business at prices a shade weak. Northern Belle shows a large business at declining prices; the sales aggregate 2600 shares at $15½@$11¾. Robinson has been very active and well maintained. The sales aggregate 12,440 shares at $12⅞@$13½. The insiders, although believing in the stock, are kindly letting the public have some at present prices, as they are taking a very handsome profit in doing so. Stormont has dropped to $2¾. Barcelona has been active and for most of the week ranged between $1.10 and $1.15. To-day it sold down to $1. Big Pittsburg has had a moderate business at declining prices, selling from $1.80 down to $1.10. Bull-Domingo has been quite active, but at declining prices. The sales amount to 11,000 shares at $1.65@$1.20. Oriental & Miller has had a large business under a slight decline. Silver Cliff, under a moderate business, has been very weak, selling down to $2.75 to-day. The mill has stopped. One party says because the mine is a failure. Another party says that the stoppage has taken place to make a clean-up previous to the new superintendent taking charge. The State Lines are largely dealt in, but do not furnish much excitement. Nos. 2 and 3 have ranged between $3.80 and $4.10, and Nos. 1 and 4 between 96c. and 90c.

The *Real Estate Record* says: And now the secret of the decline in Silver Cliff has been made known. It seems the 40,000 shares which Heath & Co. sent to London have been returned. James R. Keene supposed that if Foxhall won the Grand Prix, the shares of a mine owned by him would sell readily to the English public. But Mr. Keene has made very violent enemies on this side of the Atlantic, and it is clear that he has been discredited in London. At any rate, the Silver Cliff stock has been returned, and is now in Sam Bocock's office.

The superintendent of the Canada Consolidated Gold Mining Company, under date of September 17th says: Underground, the same work is progressing as reported in my last. On the surface, the houses and office are being completed. The superintendent's house is up to the second floor. Work on the mill is progressing but slowly, owing to all of the contractors being behindhand with the machinery. The tramway between the Tuttle shaft and the mill has been commenced. Mr. R. P. Rothwell, the company's consulting engineer, and myself have decided to erect the turbines this fall, since the contractor for the engine is much behind. The turbines have been ordered, and the flume, dams, embankments, waste-gate, penstock, etc., are now constructing. During the last week, very little work has been accomplished on the surface, owing to fires raging through the country. We had to divide the men into a day and night gang, and were by this means enabled to keep the fire under control until the afternoon of the 15th, when a gale sprang up from the east, and in less than fifteen minutes the fire had crossed the Moira River, and we were nearly surrounded with flames. In a short time, the fire got into the swamp between the new mill and the dwellings, when it looked as though the whole property would be destroyed. The families moved out of the houses, but every one worked hard. On Friday morning, we were masters of the situation without having sustained any loss. In the old mill, one of the steam pumps burst, but we immediately replaced it by a new one which we had on hand. The gale is still blowing, but I think we are out of danger. Mr. Stetefeldt, the metallurgist, has spent several weeks here, consulting with Mr. Rothwell and myself, and finally a plan for the roasting and chlorination of the ores has been decided upon. Mr. Stetefeldt has furnished the working drawings necessary to erect the works.

UNLISTED QUOTATIONS.

Mr. L. V. Deforeest, No. 70 Broadway, under date

NON-DIVIDEND PAYING MINES.

NAME AND LOCATION OF COMPANY.		NUMBER OF SHARES.	Par.	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount of last.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE. Sept. 17. H.	Sept. 17. L.	Sept. 19. H.	Sept. 19. L.	Sept. 20. H.	Sept. 20. L.	Sept. 21. H.	Sept. 21. L.	Sept. 22. H.	Sept. 22. L.	Sept. 23. H.	Sept. 23. L.	SALES.
Albion, S. L.	Nev.	150,000	100	.....	Aug. 81 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez								3.65										100
Alta-Montana, G	Mon.	500,000	10	*		.....	.....	1.95	1.90	.....	.....	.....	.....	1.95	.....	.....	.....	1,700
Am. Flag, S	Colo	120,000	10	*		.....	.....	.....	.....	.....	.....	11c	.....	11c	.....	.....	.....	1,000
Bald Mountain, G	Colo	1,000,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barcelona, G	Nev	200,000	25	*		1.15	1.05	1.15	1.10	.....	.....	1.15	1.10	1.15	1.10	1.15	1.00	8,200
Battle Creek	Dak.	200,000	25	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bear Creek	Colo	300,000	1	.....		76c	75c	76c	75c	.....	.....	77c	73c	75c	74c	77c	76c	7,500
Bechtel Con., G	Cal.	100,000	100	162.750	Dec. 81 15	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
Best & Belcher, G. S	Nev.	100,800	100	1,043,390	Jly. 81 50	15.00	.....	14.75	.....	13.25	.....	13.75	12.75	.....	.....	.....	.....	760
Big Pittsburg, S. L	Colo	200,000	100	*		.....	.....	.....	.....	.....	.....	1.80	1.75	1.65	1.60	1.50	1.10	5,340
Black Jack, G	Cal.	100,000	2½	.....		.....	.....	75c	70c	.....	.....	69c	.....	.....	.....	69c	.....	2,300
Bonanza Chief	Mon	1,000,000	1	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bondholder	Colo	200,000	2½	.....		74c	.....	74c	.....	.....	.....	72c	70c	74c	71c	74c	71c	4,500
Boston Con, G	Cal.	100,000	100	30,000	Apr. 81 30	.....	.....	14c	.....	.....	.....	.....	.....	.....	.....	11c	10c	2,300
Boulder Con, S	Colo	200,000	10	.....		20c	17c	.....	.....	19c	.....	.....	.....	.....	.....	20c	18c	2,640
Bradshaw, S	Ariz	225,000	10	.....		97c	.....	92c	.....	.....	.....	95c	79c	80c	72c	85c	72c	21,800
Buckeye	Colo	100,000	5	*		9c	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	700
Bull-Domingo, S L	Colo	200,000	50	*		.....	.....	1.65	.....	.....	.....	1.55	.....	1.60	1.20	1.35	1.30	11,000
Bullion, G. S	Nev.	100,000	100	3,762,000	July 81 60	.....	.....	.....	.....	.....	.....	1.25	.....	.....	.....	.....	.....	300
Bulwer G	Cal.	100,000	100	30,000	Dec. 77 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bye and Bye	Ariz	100,000	10	*		20c	19c	20c	19c	.....	.....	21c	20c	20c	.....	21c	19c	7,700
Calaveras, G	Cal.	500,000	1	*		15c	.....	15c	14c	.....	.....	15c	.....	.....	.....	15c	.....	14,700
Cal., B. H., G	Dak.	100,000	100	400,000	Mar. 81 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carbonate Hill, S L	Colo	400,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Catskill, S	Nev.	300,000	5	.....		.....	.....	11.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Central Arizona, S	Ariz	100,000	100	.....		2.00	.....	2.00	1.95	.....	.....	2.00	.....	.....	.....	.....	.....	20
Cherokee, G	Cal.	150,000	10	.....		.....	.....	1.40	1.35	1.50	.....	1.35	.....	.....	.....	.....	.....	750
Cheyenne Cons, G	Dak.	300,000	1	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,700
Clarence				.....		.....	.....	2.00	1.90	2.00	1.90	.....	.....	1.85	.....	2.00	1.85	1,750
Colorado Central, S	Colo	300,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia Con., G. S	Nev.	100,000	50	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Imperial, G. S	Nev.	500,000	100	1,375,000	Aug. 81 10	.....	.....	25c	.....	8c	.....	20c	.....	.....	.....	21c	.....	3,700
Con. Pacific, G	Cal.	60,000	100	114,000	Jly 81 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49c	45c	800
Con. Pay Rock, S	Colo	250,000	1	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crescent, S L	Colo	300,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crowell, G	N. C.	50,000	1	.....		20c	.....	18c	10c	.....	.....	20c	12c	16c	13c	14c	12c	14,300
Dahlonega, G	Ga.	250,000	1	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dardanelles, G	Cal	100,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunderberg, S	Colo	150,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Durango, G	Dak.	500,000	1	*		.....	.....	16c	.....	.....	.....	.....	.....	.....	.....	11c	.....	1,200
Empire, S	Ut'h	100,000	100	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Enterprise	Colo	.....	.....	.....		50c	49c	45c	44c	.....	.....	49c	48c	49c	48c	50c	47c	5,600
Exchequer	Nev.	100,000	100	635,000	Sept. 80 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Globe Copper						1.95	1.85	.....	.....	.....	.....	.....	.....	1.85	1.80	.....	.....	500
Glynn Dale Con. G	Cal.	100,000	100	75,000	Jan. 81 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Placer, G	Colo	200,000	25	*		.....	.....	.....	.....	.....	.....	.....	.....	40c	.....	.....	.....	200
Goodshaw, G	Cal.	100,000	100	145,000	Feb. 81 15	40c	37c	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	600
Granville, G	N. C.	300,000	1	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harshaw, S	Ariz	100,000	100	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Head Center, S	Ariz	100,000	100	55,000	May 81 30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hortense, S	Colo	200,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Julia ..., G S	Nev.	110,000	100	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kossuth, G S	Nev.	108,000	100	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
La Crosse, G	Colo	100,000	10	*		.....	.....	26c	.....	25c	.....	.....	.....	.....	.....	25c	.....	1,100
Legal Tender, S L	Colo	200,000	5	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leviathan, S	Nev	100,000	100	350,000	Mar. 81 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lucerne, S	Colo	500,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malachite	Nev.	200,000	5	.....		.....	.....	25c	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Mariposa preferred, G	Cal.	50,000	100	1,425,000	Dec. 80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" common, G	Cal.	100,000	100	1,425,000	Dec. 80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May Belle, G	Cal.	100,000	100	80,000	Jne 81 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maydower, S	Colo	100,000	100	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican, G. S	Nev.	100,800	100	4,509,000	Jne 81 $1	13.00	12.00	.....	.....	11.25	.....	.....	.....	.....	.....	.....	.....	515
Michoacan Syndicate	Mex	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mineral Creek, S	Ariz	200,000	10	*		19c	17c	17c	16c	.....	.....	18c	15c	17c	16c	17c	15c	37,400
Miner Boy, G S L	Colo	1,000,000	5	*		45c	43c	46c	43c	44c	43c	44c	43c	45c	43c	44c	42c	30,800
Miller	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mogo, S	Cal.	50,000	100	375,000	Aug. 81 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moose Silver, S	Colo	300,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nevada Syndicate				.....		99c	98c	.....	.....	.....	.....	98c	.....	99c	.....	97c	96c	1,500
North Standard, G	Cal.	100,000	100	.....		25c	.....	23c	.....	.....	.....	24c	19c	.....	.....	20c	19c	1,300
North Horn Silver, S L	Utah	400,000	10	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Noonday	Cal.	60,000	100	.....	Jne 81 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Old Dominion, C	Ariz	200,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oriental	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oriental & Miller, S	Nev.	400,000	25	.....		93c	91c	93c	89c	90c	85c	93c	88c	88c	84c	87c	85c	59,300
Overman, G S	Nev.	115,200	100	3,460,700	July 81 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rappahannock, G	Va.	250,000	1	*		19c	.....	19c	.....	20c	19c	.....	.....	19c	17c	19c	.....	2,700
Red Elephant, S	Colo	500,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	18c	.....	.....	.....	500
San Pedro, G S L	N. M	400,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Cliff, S	Colo	300,000	50	*		3.35	3.25	3.25	3.00	3.15	3.10	3.10	3.00	3.10	2.90	3.00	2.75	6,256
Silver Islet				.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Nugget, S	Ariz	200,000	10	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver N, new stock, S	Ariz	250,000	10	.....		56c	43c	48c	45c	.....	.....	.....	.....	48c	45c	40c	38c	8,400
South Bodie, G	Cal.	100,000	100	85,000	Nov. 80 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bulwer, G	Cal.	100,000	100	195,000	May 81 25	.....	.....	30c	27c	35c	30c	.....	.....	28c	.....	30c	.....	16,400
South Hite	Cal.	100,000	5	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State Line No. 1, S	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" No. 2, S	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" No. 3, S	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" No. 4, S	Nev.	200,000	25	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Nos. 1 and 4, S	Nev.	.....	.....	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Nos. 2 and 3, S	Nev.	.....	.....	.....		96c	94c	98c	92c	94c	92c	95c	93c	93c	90c	94c	90c	26,500
Sutro Tunnel	Nev.	1,000,000	10	*		4.10	3.95	4.10	3.90	4.00	3.80	4.00	3.85	4.00	3.80	4.00	3.85	41,800
Tabor Mine Co	Colo	250,000	20	.....		1.75	1.70	1.80	1.63	1.65	1.60	1.63	1.50	1.55	.....	1.60	1.55	7,775
Tioga, G	Cal.	100,000	100	260,000	Aug. 81 20	.....	.....	.....	.....	.....	.....	.....	.....	45c	42c	45c	.....	400
Tuscarora, S	Nev.	100,000	100	95,000	Apr. 81 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unadilla, S	Colo	500,000	1	*		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
Union Cons, G. S	Nev.	100,000	100	1,160,000	Jly 81 $1	17.50	17.00	16.50	15.00	13.75	13.25	9c 13.00	12.75	.....	.....	14.00	.....	1,135
Vandewater, S	Nev.	200,000	10	*		36c	.....	36c	35c	.....	.....	37c	32c	33c	32c	33c	32c	14,000
Washington, S	Ariz.	200,000	5	.....		.....	.....	35c	34c	.....	.....	.....	.....	3 c	.....	36c	35c	5,700
Wiltshire, G	Cal	500,000	1	*		.....	.....	.....	.....	.....	.....	.....	.....	90c	85c	90c	88c	2,400

g. Gold. s. Silver. L. Lead. c. Copper. * Non-assessab e.

Total shares of Non-Dividend Paying Stocks sold during the week, 339,941. Total sh ires sold at all the Exchanges during the week, 602,723.

Boston.

Quotations and Sales of Mining Stocks for week ending Sept. 21st.

NAME OF COMPANY.	Opening Sept. 15.	Highest during the week.	Lowest during the week.	Closing Sept. 21.	Total shares sold.
Allouez	3¾	3¾	3½	3½	600
Animas Con.	1.10	1.10	1.05	1.05	1,000
Atlantic	16¾	17⅜	16	17	650
Aztec	.60	.60¾	.50	.62½	1,650
Blue Hill	3.87½	3.87½	3¾	3¾	450
Bon. Delv'mt	5¼	5¼	5.00	5.00	240
Bruns. At'y.	7.00	8.00	6¾	8.00	350
Cal. & Hec. c.	220	220½	220	220½	112
Catalpa	1.25	1.37½	1.25	1.37½	1,600
Cedar Spring	.62	.81	.62	.75	40,600
Columbus G.	1.06	1.15	1.05	1.10	2,800
Copper Falls	4.00	4.00	2¾	2¾	1,650
Copperopol's	2.13	2.21	2.10	2.11	8,350
Crescent	1¼	1¼	1.00	1 1-16	2,490
Dana	.45	.45	.40	.40	1,700
Deer Isle	.70	.85	.65	.65	4,800
Douglas	2.25	2.50	2.25	2.50	900
Duncan	.62½	.62¼	.....	.62½	200
Dunkin	.55	.55	.51	.51	600
Empire	.37	.38	.30	.34	10,300
Favorite	.12½	.12½	.....	12½	500
Franklin	13.25	13.50	12.88	13.50	935
Golden Dest't	2.27	2.30	2.27	2.29	3,100
Hanover	.30	.32	.30	.32	700
Harshaw	6½	6½	.....	6½	150
Hungarian	.50	.50	.....	.50	100
Huron	4.25	4.5 16	4¼	4¼	600
Mass. & N. M.	.35	.38	.24	.25	38,500
Mesnard	1.00	1.00	.87½	87½	500
Milton	.96	1.14	.92	1.13	54,700
Napa	6⅜	6¾	6.00	6.00	1,000
National	2⅜	2⅜	2¼	2¼	1,120
Osceola, C	29½	30	29½	30	167
Peabody	.51	.60	.59	.56	17,200
Pewable	14⅜	15	14⅜	15	400
Phœnix	2.00	2.00	1.75	1.75	125
Quincy, C	38⅛	40	38¼	39	622
Ridge	4⅞	4¾	4¾	4¾	150
San Pedro	2¼	2½	2 1-16	2¼	1,925
Silver Islet, s	31.00	32.00	30.00	30	475
Simpson Gld	.05	.05	.....	.05	600
Sullivan	4.25	4¾	4.00	4¼	1,570
Sycamore	1.12½	1.25	1.12½	1.15	225
Twin Lead	.65	.65	.....	.65	2,100
W. Minnes'ta	.20	.20	.....	.20	300

c. Copper. s. Silver.

Philadelphia.

Quotations and Sales of Mining Stocks for week ending Sept. 21st.

NAME OF COMPANY.	Opening Sept.	Highest during the week.	Lowest during the week.	Closing Sept.	Total shares sold.
Argent	.....	.....	.....	.....	.....
Ariz. & N. M.	.....	.....	.....	.....	.....
Aztec	.....	.....	.....	.....	.....
Battle Mt.	.....	.....	.....	.....	.....
Buena	.....	.....	.....	.....	.....
California	.....	.....	.....	.....	.....
Cincinnati	.....	.....	.....	.....	.....
Crown	.....	.....	.....	.....	.....
Dauntless	.....	.....	.....	.....	.....
Den. C'y Con	.....	.....	.....	.....	.....
Fairv'w Con	.....	.....	.....	.....	.....
Girard	.....	.....	.....	.....	.....
Golconda	.....	.....	.....	.....	.....
G. & g. Group	.....	.....	.....	.....	.....
Gov. Group	.....	.....	.....	.....	.....
Grand Union	.....	.....	.....	.....	.....
Gun. Imp. Co	.....	.....	.....	.....	.....
Hancock	.....	.....	.....	.....	.....
Homestake	.....	.....	.....	.....	.....
Iowa Gulch	.....	.....	.....	.....	.....
King Bullion	.....	.....	.....	.....	.....
Little Maud	.....	.....	.....	.....	.....
Lng. & Derry	.....	.....	.....	.....	.....
Monitor	.....	.....	.....	.....	.....
Mt. Lincoln	.....	.....	.....	.....	.....
Mt. Sheridan	.....	.....	.....	.....	.....
National	.....	.....	.....	.....	.....
Orion	.....	.....	.....	.....	.....
Penn Breck	.....	.....	.....	.....	.....
Pizarro	.....	.....	.....	.....	.....
Pizarro Extn	.....	.....	.....	.....	.....
Rara Avis	.....	.....	.....	.....	.....
Rico Pioneer	.....	.....	.....	.....	.....
San Pedro	.....	.....	.....	.....	.....
Silver Cord	.....	.....	.....	.....	.....
Silver Rock	.....	.....	.....	.....	.....
Standard	.....	.....	.....	.....	.....
Tombstone	.....	.....	.....	.....	.....
Victor	.....	.....	.....	.....	.....

of September 23d, 3 P.M., reports the current quotations of unlisted stocks as follows:

	Bid.	Off'd.		Bid.	Off'd.
Bald Mountain	$0.03	$0.04	Patagonia	$0.50	$0.75
May Flower	....	.40	Sacramento	....	.25
Hite	....	4.25	Santa Cruz	.50	.75

Philadelphia Mining Stock Market.

The market has somewhat rallied in tone, and in the quantity of sales it still maintains a fair proportion to the amount of the previous week. The news of the decease of our martyred President has had no depressing effect upon the market.

REVIEW OF THE SAN FRANCISCO MARKET.

The north end stocks have been steadily losing their recent advances during the past few days, until they have receded almost to the point at which they started. Sierra Nevada has declined $10 per share, Union Consolidated $6, and others in proportion. The reason given for the decline is, that Senator Fair is planning for dead-work to be done in the Sierra Nevada and Union Consolidated in case it will be necessary for him to go to Washington, and in his absence the development of the ore-body will have to be postponed. This will necessitate the levying of additional assessments, and this, together with the fact that there have been no authentic reports of the condition of the mines to warrant the prices that the stocks have lately been selling for, makes an outlook not very favorable for immediate improvement.

The most noteworthy advance in the list is in Martin White, which sold last Saturday at 25c. and closed yesterday at $2.

Assessments on thirty-two mines become delinquent this month. According to the San Francisco *Bulletin*, the money sought for is apportioned as follows:

Nevada	$600,400
California	203,800
Idaho	5,000
Total	$809,000

During the month of September, 1880, fifty-one assessments became delinquent, amounting to $1,094,600. The delinquent assessment roll for the first nine months of the year compares as follows:

	Mines.	Amount.
January	30	$780,500
February	29	886,400
March	29	417,400
April	39	1,068,450
May	29	678,800
June	29	754,810
July	30	570,900
August	33	1,212,300
September	32	809,000
Totals	279	$7,184,560
In 1880	370	10,286,300
In 1879	360	11,519,300

Copper and Silver Stocks.

Reported by C. H. Smith, 15 Congress street, Boston, Stock Broker and Member of the Boston Mining and Stock Exchanges.

BOSTON, Sept 22.

The market for copper stocks has ruled steady, the advance of last week being generally well sustained, although the transactions have been somewhat lighter; there is, however, a good healthy tone. Calumet & Hecla, on the report that an extra dividend would be forthcoming this fall, was exceptionally strong, and advanced from $220 to $229½, without bringing out much stock. Franklin has

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS. Sept. 16.	Sept. 17.	Sept. 19.	Sept. 20.	Sept. 21.	Sept. 22.	Opening. Sept. 23.
Alpha	4⅛	4¼	4	.....	4	.....	.....
Alta	5¼	5⅜	5¼	.....	5⅜	5¼	.....
Bechtel	15-16	13-16	¾	.....	¾	¾	.....
Belcher	3¼	3⅛	3¼	.....	3	3⅛	.....
Belvidere	.....	.....	¼	.....	3-32	.....	.....
Best & Bel.	14¾	14	12⅝	.....	12⅞	12⅛	.....
Bodie	8⅛	8⅛	8¼	.....	8⅛	8⅛	.....
Bullion	1¼	1	1⅛	.....	15-16	19-32	.....
Bulwer	2½	.....	.....	.....	.....	2½	.....
California	1	1	.....	.....	.....	15-16	.....
Challar	3	2⅝	2⅜	.....	2½	2¼	.....
Con. Va	2⅛	2	1⅞	.....	2	2¼	.....
Crown P'int	1⅞	1¾	1⅞	.....	1⅝	1¾	.....
Eureka Con	.....	27	27½	.....	27	27	.....
Exchequer	1¼	1¼	1¼	.....	1	1	.....
Goodsl...w	.....	.....	.....	.....	.....	.....	.....
Gould &Cur	8¼	7¾	7½	.....	7½	7¼	.....
Grand Prize	13-32	.....	.....	.....	.....	.....	.....
Hale & Nor.	4½	4⅜	4	.....	4	3⅞	.....
Manhattan	.....	.....	.....	.....	.....	.....	.....
Mar. White	.....	¼	.....	.....	1	2	.....
Mexican	13⅜	12⅝	11⅜	.....	12¼	11⅛	.....
Mono	3	2¾	.....	.....	3⅜	2½	.....
Mt. Diablo	.....	.....	.....	.....	6½	6	.....
Navajo	¼	11-32	.....	.....	.....	.....	.....
North. Belle	14⅞	15	12	.....	11¼	12⅜	.....
Noonday	21-32	½	.....	.....	½	½	.....
Ophir	8¾	8½	7⅞	.....	8½	8⅛	.....
Oro	19-32	9-16	19-32	.....	19-32	.....	.....
Overman	2¾	2⅞	2½	.....	2⅝	2½	.....
Potosi	3¼	3⅜	3⅜	.....	3⅜	3¼	.....
Savage	3¼	3¼	3⅛	.....	3	2¾	.....
Scorpion	2½	2¼	2	.....	2⅛	2	.....
Sierra Nev.	27	23¾	20	.....	21¼	19⅛	.....
Silver King	18⅝	19	19⅜	.....	19¼	19⅛	.....
So. Bodie	.....	.....	.....	.....	.....	.....	.....
So Bulwer	.....	.....	.....	.....	.....	.....	.....
Tioga	.....	.....	.....	.....	.....	.....	.....
Tip Top	6	.....	5⅞	.....	5⅞	.....	.....
Tuscarora	.....	.....	.....	.....	.....	.....	.....
Union Con.	17⅞	15⅝	13	.....	14¼	13½	.....
Wales Con.	113-16	.....	.....	.....	.....	.....	.....
Yel. Jacket	5¾	5⅝	5	.....	5⅛	4⅞	.....

been fairly steady, closing at $13¼ bid. Pewabic declined from $15½@$14⅜, but has since sold at $15, and is in good demand at that price. Atlantic advanced from $16 @$17¾, with sales later at $17, closing $16½ bid, $17 asked. Osceola is steady at $29½@$30. Quincy touched $40, but did not hold at that price, and declined to $39, closing today at $38½ bid and none offered under $40. Copper Falls declined from $4@$2½, later sales at $2¾. The report of the treasurer at the annual meeting shows a deficit of about $50,000, and an assessment of $4 per share is now talked of, which accounts for the decline. Huron was a little weak and declined from $4½@$4⅛, closing $4¼ bid. Allouez steady at $3¾@$3½. The speculative list was rather quiet. Silver stocks at the regular board were very dull, with a declining tendency. At the Boston Mining and Stock Exchange, the volume of business has been quite large, notwithstanding the fact that the Board have held but one session since Friday, having voted to dispense with the afternoon call until after the funeral of President Garfield, and to hold no session on the day of the funeral.

3 P. M.—At the afternoon Board of the regular Stock Exchange, copper stocks were dull and prices lower. Atlantic sold at $16, and Pewabic at $14½@$15. For Quincy $39 was bid, and Franklin sold at $13¾@$13. The following are additional quotations: Copper Falls, $2¾ bid, $3 asked; Huron, $4 bid, $4½ asked; National, $2 5-16 bid, $2½ asked; Ridge, $4¾ asked; Mesnard, 50c. bid, 75c. asked.

Coal Stocks.

NEW YORK, Friday Evening, Sept. 23.

The transactions in stocks in this city and in Philadelphia have not been as large as usual during the past week, owing to the President's death and the general inactivity prevailing for a few days following. The enormous business done in Reading of late, however, has swelled the aggregate sales of coal companies' shares in this market and in Philadelphia to 395,628 shares. This stock sold on Monday at $63½, and under heavy buying has advanced to $73 today. The cause of the advance is generally ascribed to the buying by adherents of the opposing managements, in order to obtain the control at the annual meeting. The sales of the stock in this market amount to 131,820 shares. Delaware, Lackawanna & Western is stronger, selling up to $127½, as against $125½ last Saturday; the sales amount to 106,200 shares. Delaware & Hudson, on sales of 5315 shares, has ruled steady, the price fluctuating between $108⅝@$109¾. The sales of New Jersey Central have amounted to 32,600 shares at $95@$97¼.

BULLION MARKET.

NEW YORK, Friday Evening, Sept. 23.

BULLION PRODUCTION FOR 1881.

We give below a statement showing the latest bullion shipments. These are officially obtained from the companies, where that is possible; and where official statements can not be procured, we take the latest shipments published in those papers nearest to the mines reported. The table gives the amount shipped for the week up to the date given, as well as the aggregate shipments to such date, from the first of January, 1881.

The shipments of silver bullion are valued at $1.29·29 per ounce, Troy; gold at the standard $20.67 per ounce, Troy. The actual value of the silver in the following table is therefore subject to a discount, depending on the market price of silver. If the price of silver be counted at $1.12 per ounce, which has for some months been about its average value, the following figures, where they relate to silver bullion, should be diminished by about 13½ per cent to arrive at actual value.

MINES.	States.	For the week.	Month of Septemb'r.	Year from Jan. 1st, 1881.
Alice, G. S.	Mont	.....	.....	$538,360
Barbee & Walker, S.	Utah	$9,146	$17,953	136,830
*Belle Isle, G. S.	Nev	.....	.....	12,060
*†Big Pittsburg, S.	Colo	.....	.....	57,949
Bodie, G.	Cal	7,100	21,180	276,837
*California, G. S.	Nev	.....	.....	110,664
Caribou, S.	Colo	.....	3,842	108,270
*Castle Dome	Ariz	.....	.....	197,259
*Christy, S.	Utah	.....	.....	198,659
*Chrysolite, S.	Colo	.....	.....	609,166
Concordia, G.	Cal	.....	.....	2,234
Connor, S.	Utah	4,465	9,801	74,706
Con. Virginia, G. S.	Nev	.....	.....	148,960
Crismon-Mammoth, G.	Utah	2,700	4,928	51,304
*Custer, G. S.	Idaho	.....	.....	497,040
*Deadwood-Terra, S.	Dak	.....	.....	509,334
*Derbec, Blue Grav., G	Cal	.....	10,600	78,622
*Eureka Con., G. S. L.	Nev	.....	.....	852,022
Exchange Silver	"	.....	.....	44,40.)
Fresno Enterprise, G.	Cal	.....	.....	9,600
Grand Central Mill	Ariz	.....	.....	375,854
*Grand Prize, S.	Nev	.....	.....	51,658
Hale & Norcross, G. S.	"	.....	.....	33,090
Harshaw, S.	Ariz	.....	.....	297,006
*Head Center	"	.....	.....	80,231
*Homestake, G.	Dak	.....	.....	759,099
Horn-Silver, S. L.	Utah	54,000	111,500	1,076,499
Idaho, G.	Cal	.....	.....	266,400
*Independence, S.	Nev.	.....	.....	17,108
*Indian Queen, S.	"	.....	.....	125,721
Iron Silver	Colo	.....	.....	327,600
Jocuista, S.	Mex	.....	.....	229,388
*†Little Chief, S. L.	Colo	.....	.....	169,645
Mack Morris	Ariz	.....	.....	152,399
*Modoc	Cal	.....	.....	34,704
Morning Star	Colo	.....	.....	15,200
*Mount Potosi, G. S.	Nev	.....	.....	74,319
*Navajo	"	.....	.....	128,124
New York & Arizona	Ariz	.....	.....	2,755
Noonday, G.	Cal	.....	.....	197,343
Northern Belle, S.	Nev	28,250	76,670	950,558
*Oneida, G.	Cal	.....	.....	46,045
*Ontario, S.	Utah	58,936	103,308	1,674,230
*Ophir, G. S.	Nev	.....	.....	5,170
Pascoe, S.	Utah	.....	.....	29,950
Rebellion	"	.....	.....	10,512
Richmond, S. L.	Nev	.....	.....	652,251
Robinson Con., S.	Colo	.....	.....	129,000
*Sierra Nevada, G. S.	Nev	.....	.....	179,001
*Silver Bow	Mont	.....	.....	370,942
Silver Cliff	Colo	.....	.....	26,925
Silver King, S.	Ariz	.....	.....	410,358
Sonora Con. M. & M. Co	"	.....	.....	3,060
Standard, G.	Cal	39,C80	129,740	1,491,913
*Star, G.	Nev	.....	.....	233,755
Stormont, S.	Utah	10,447	27,142	175,682
Sullivan, S. L.	Maine	.....	.....	5,340
Syndicate, G.	Cal	.....	6,600	78,587
Tintic M. and M. Co.	Utah	21,010	23,128	89,600
*Tip Top, S.	Ariz	.....	.....	255,029
*Tombstone	"	.....	.....	1,046,608
*Union Con., G. S.	Nev	.....	.....	43,100
Vandewater	"	.....	.....	1,700
*Vizina	Ariz	.....	.....	268,045
*Western	"	.....	.....	962,320
Total amount of shipments to date				$18,068,040

* Official. † Net. *C. Copper, estimated at* 17c. *G. Gold. S. Silver. L. Lead.*

Bullion Receipts at New York.—The bullion received from the mines at the various offices in this city during the week ending September 22d, as compiled from various sources, amounted to $162,534.22, as against $481,978.79, reported for the previous week, and $12,242,880.64 from January 1st, 1881, to date.

The weekly statement of the Imperial Bank of Germany shows a decrease in specie of 5,300,000 marks.

For the week ending September 17th, the distribution of standard silver dollars amounted to $518,493; for the corresponding week last year, $826,496.

COAL STOCKS.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend.			Rate per Ann.	Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted so much per share. Sept. 17. H.	Sept. 17. L.	Sept. 19. H.	Sept. 19. L.	Sept. 20. H.	Sept. 20. L.	Sept. 21. H.	Sept. 21. L.	Sept. 22. H.	Sept. 22. L.	Sept. 23. H.	Sept. 23. L.	Sales from Sept. 17th to Sept. 23d inclusive.
	$		$	Mo.	Y.	R't.	Per c'nt													
Am. Coal Co.	1,500,000	60,000	25	...	..	....	...	..	.....	40¾	39½	41	40½	41	.....	41	40¾	40¾	40¾	2,100
Cameron C'l	2,500,000	50,000	50	.....	..	....	...	.....	.....	.....	.....	.....	.....	55¾	54½	54½	54¼	54½	54¼	5,020
Col. C. & I.	10,000,000	100,000	10	.....	..	....	...	54½	54	.....	.....	.....	.....	.....	.....	29¾	29½	.....	.....	1,950
Ches. & O. RR	15,000,000	150,000	100	.....	..	....	...	59¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Consol. Coal.	10,250,000	102,500	100	Jan.	77	2½	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumb. C. & I.	500,000	5,000	100	.....	..	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C.	20,000,000	200,000	100	May	81	1½	9	+	109¼	109⅛	108⅜	109⅛	109⅛	109¾	109	109¼	109	109¾	109¼	5,315
D., L. & W. RR	26,000,000	524,000	50	Mar.	81	1½	6	‡	125½	126¼	125⅝	127¼	126¼	127⅜	126¼	126⅝	126¼	127⅛	126⅝	106,200
Lehigh C. & N	10,448,550	208,971	50	Sept	..	1½	5½	44⅜	44⅛	44½	.....	.....	.....	44⅜	44½	44½	.....	.....	.....	4,570
Leh. V. y R. R	27,042,900	540,858	50	Jan.	76	....	4	61¾	.....	60⅜	.....	.....	.....	61	.....	.....	.....	.....	.....	882
Maryl'd Coal	4,100,000	44,000	100	.....	76	1½	1½	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montauk C'l.	2,500,000	25,000	100	.....	..	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Es'x	15,000,000	300 000	50	Dec.	..	....	7	‖	.....	123½	.....	.....	.....	123	.....	124	.....	.....	.....	299
New Cen. C'l	5,000,000	50,000	100	Apr	80	2	....	.....	.....	26	.....	.....	.....	26	.....	.....	.....	26	.....	400
N. J. C. RR.	20,600,000	206,000	100	Oct.	76	2½	2½	96¾	95	95⅞	95½	96⅛	95⅝	97	95⅝	96⅜	95⅜	97¼	96⅜	32,600
Penn. Coal	5,000,000	100,000	50	May	79	3	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. R. R.	68,870,200	1,377,404	50	Jan	81	4	....	65	63⅝	65	64⅝	.....	.....	65⅛	65	65⅜	65	.....	.....	38,466
Ph. & R. RR*	34,278,150	685,563	50	.....	76	2¼	10	65	63⅜	64⅞	63¼	65¼	64¼	66⅜	65¾	70⅜	67	73	70¼	200,3.6
Spring Mt. C'l	1,500,000	30,000	50	.....	..	....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

+ 109⅛. ‡ 126⅝. ‖ 124¾. Total Sales..... 395,628.

Of the sales of this stock 78,596 shares were in Philadelphia and 131,820 in New York.

Exports of Gold and Silver from New York.

Week ending last Saturday	$245,130
Corresponding week last year	
Since January 1st	8,149,231
Corresponding period last year	5,700,967

METALS.

NEW YORK, Friday Evening, Sept. 23.

The week under review has been a quiet one, largely owing to the death of the President, and no change is likely to occur until after Monday. Although the business has not been as large as it might otherwise have been, a very strong feeling prevails, and in several instances prices are higher here and in London.

Copper.—The rapid advance in prices has checked business, reducing the sales to mere jobbing transactions. The consumption, however, keeps along as strong as it has been, and we shall not be surprised to see an active demand a little later on at the prevailing, or even higher, prices. We quote at 18⅛@18¼c. for Lake. Chili Bars in London were quoted at £61 10s. cash on the 21st.

Our London advices include September 13th, from which we take the following:

Sept. 7th. Better demand and improving prices. Sales about 450 tons at £59¾@£60¼ cash, for good ordinary and named brands, £60½@£60¾ for arrival.

Sept. 8th. Market still firm, with very good demand. Sales about 575 tons at £59⅞@£60 for g. o. bs. net, sharp cash and fourteen days; £60⅝@£61 for forward delivery according to prompt; best brands, £61 fourteen days.

Sept. 9th. Chili Bars in active request and market slightly excited. Sellers scarce. Sales about 400 tons at £60⅛@£60⅜ net cash for g. o. bs., and £60½ usual allowances. For forward delivery, £60¼@£61½ three months, according to prompt and terms. Wallaroo is quoted at £66½@£67½; Burra, £66@£66½; English Tough Cake, £63½@£64½, and Select Ingot, £65½@£67.

Sept. 12th. The market was irregular but strong. The sales amounted to 600 tons at £60½@£61 prompt payment, for g. o. bs.; £60⅝@£61 fourteen days; £60¾ one month, and £61½@£62 three months.

Sept. 13th. Sales about 500 tons at £61@£61¼ for cash parcels, and £61¾@£62 for forward deliveries.

The Census office has furnished the following statistics of copper production in the United States for the census year 1880:

	Product lbs. of copper.	Value of Product.
Michigan	45,830,262	$7,979,232
Maine	83,080	10,115
Maryland	164,640	1,200
Missouri	230,717	25,730
North Carolina	1,640,000	350,000
Pennsylvania	476,508	5,630
Tennessee	Not reported.	
Vermont	2,647,894	469,495
Wisconsin	18,087	1,549
Colorado, Arizona, Idaho, California	5,764,460	Not rep't'd.

The total production reported was 56,855,648 pounds of ingot copper. To this is to be added the small production of Tennessee, in which State 294 tons of copper ore were mined. Since the time to which these figures are made up, there have been *i m*

portant developments in at least two other territories, which now produce quite largely.

STATISTICS OF COPPER—ENGLAND AND FRANCE, INCLUDING METAL AFLOAT.

		Aug. 1 to 31. Imports. Tons.	Deliveries. Tons.	
Fine foreign, chiefly Australian		686	1,195	London.
Chili	Bars and Ingots	1,075	3,833	Liverpool & Swansea.
	In Ores and Regulus	587	375	
Precipitate and Sundries		2,356	2,387	
Totals, England		4,704	7,790	
Fine foreign, chiefly American.		275	335	France.
Chili Bars, Ingots, and Barilla.		1,097	919	
		6,076	9,044	

		Stocks. Aug. 31. Tons.	July 31. Tons.	
Fine foreign, chiefly Australian		8,394	8,903	London.
Chili	Bars and Ingots	27,104	29,862	Liverpool & Swansea.
	In Ores and Regulus	2,022	1,810	
Precipitate and Sundries		1,474	1,505	
Totals, England		38,994	42,080	
Fine foreign, chiefly American.		1,022	1,082	France.
Chili Bars, Ingots, and Barilla.		4,519	4,341	
		44,535	47,503	
Advised by Mail	Chili	9,298	8,732	
and Telegram	Australian	2,420	2,500	
		56,253	58,735	

		Jan. 1 to Aug. 31. 1881. Tons.	1880. Tons.	1879. Tons.
Imports	Chili	24,660	29,456	33,939
	Other foreign	25,129	23,155	28,551
		49,789	52,611	62,490
Deliveries	Chili	29,994	29,639	28,650
	Other foreign	23,252	20,843	28,951
		53,246	50,482	57,601

STATISTICS OF COPPER—JANUARY TO AUGUST, AS PER CUSTOMS RETURNS.

Imports.

	Jan. 1 to Aug. 31. 1881. Tons.	1880. Tons.	1879. Tons.
Pure in Pyrites	9,558	12,006	8,389
" Precipitate	13,266	10,970	10,514
" Ore	10,504	9,918	9,493
" Regulus	4,059	6,087	5,820
Bars, Cakes, etc	20,004	25,397	32,319
Total	57,391	64,378	66,535

	August only. 1881. Tons.	1880. Tons.	1879. Tons.
Pure in Pyrites	1,388	1,308	1,186
" Precipitate	1,581	804	1,326
" Ore	2,032	1,090	1,396
" Regulus	1,006	1,026	253
Bars, Cakes, etc	1,669	2,147	4,997
Total	7,676	6,375	9,158

Exports.

	Jan. 1 to Aug. 31. 1881. Tons.	1880. Tons.	1879. Tons.
Raw (English)	12,575	8,999	10,793
Sheets	9,048	11,275	10,312
Yellow Metal at 60 per cent.	5,847	6,466	6,779
Brass " " 70 "	2,077	1,694	1,705
	29,547	28,434	29,589
Foreign	9,395	10,475	11,301
Total	38,942	38,909	40,890

	August only. 1881. Tons.	1880. Tons.	1879. Tons.
Raw (English)	1,586	975	1,518
Sheets	1,362	1,679	1,498
Yellow Metal at 60 per cent.	655	1,023	716
Brass " " 70 "	264	257	227
	3,867	3,934	3,959
Foreign	1,932	1,074	1,719
Total	5,799	5,008	5,678

Tin.—This article has been fairly active, the sales amounting to from 400 to 450 tons at 21⅛@21⅜c. to arrive and up to 21¼c. on spot. At the close, spot lots are generally held at 21⅜c., although there is a little obtainable at 21¼c. L. & F. is quoted at 21⅛@22c. The position of tin, both here and abroad, is a very satisfactory one for the holders. L. & F. is quoted in London to-day at £101; Straits on spot at £94 10s.@£94 15s., and futures and arrivals at £95 15s.@£96. Singapore is strong at $29⅝, with exchange at 3s. 9¾d. The cable advices state that during the past three days the Chinese have been making large purchases for export to China, taking every thing they could get at full prices, and thereby reducing the possibility of large supplies to this country. The jobbing demand here is very good, and stocks are steadily reducing.

Our London advices include September 13th, from which we take the following:

Sept. 7th. Market firm, with sales of about 120 tons at 91¼@91⅜s. cash, and 91⅜@91½s. fourteen days prompt.

Sept. 8th. Market firm, with sales of about 75 tons at 91½@92⅛s. three months, 91⅜@92⅜ at the close.

Sept. 9th. Sales about 60 tons at 91½@91⅝s. cash, 91¾@91⅞s. fourteen days, and 92⅛@92⅜s. three months. The Dutch Trading Company announces its next sale for 28th inst., when 23,400 slabs of Banca tin will be disposed of.

Sept. 12th. Market slightly higher. Sales at 91⅝@92¼s. cash, 91⅞@92½s. usual prompt, and 92¾@93¼s. three months.

Sept. 13th. Sales about 250 tons at 92¼@92⅜s. sharp cash, 92⅜s. short prompt, 92½@92⅝s. fourteen days, and 92¾@93¼s. sundry forward deliveries.

STATISTICS OF TIN.

	Aug. 1, 1881. Tons	Sept. 1, 1881. Tons.	Sept. 1, 1880. Tons.
Foreign in London	7,549	7,548	7,408
Banca in Holland	1,264	805	1,250
Billiton in Holland	1,435	1,404	2,042
	10,248	9,757	10,700
Afloat for England, Straits, advised by mail and wire	540	25	258
Afloat Australian, ditto	1,480	1,600	1,739
Afloat Billiton	650	1,062	1,250
	12,918	12,444	12,947
Banca in Dutch Trading Company's hands	1,579	1,930	1,588
Banca afloat by sailing vessels	394	311	412
	14,891	14,685	15,947
Price of Straits Tin	£91	£90 10s.	£86 10s.

STATISTICS OF TIN—JANUARY TO AUGUST, AS PER CUSTOMS RETURNS.

	Jan. 1 to Aug. 31. 1881. Tons.	1880. Tons.	1879. Tons.
Imports, foreign	13,225	12,682	11,657
Exports. Foreign	5,823	5 937	5,354
Exports. English	3,150	2,852	3,899
Total	8,973	8,789	9,253

	August only. 1881. Tons.	1880. Tons.	1879. Tons.
Imports, foreign	1,570	1,428	823
Exports. Foreign	420	407	1,095
Exports. English	412	313	463
Total	832	720	1,558

Tin Plates.—The Liverpool market is very strong. Our own market is dull and does not partake of the strength displayed abroad. We quote per box as follows: Charcoal tins, Melyn grade, ¼ cross, $6⅛; Allaway grade, $5.70@$5⅝. Charcoal Roofing, Dean grade, $5.35 for 14 × 20, and $11⅛ for 20 × 28; Allaway grade, $5.15@$5.20 for 14 × 20, and $10¾ for 20 × 28. Coke Roofing, B. V. grade, $4⅛ @$5 for 14 × 20, and $10⅛ for 20 × 28. Coke tins, B. V. grade, IC, $5.05, and ICW, $4.55.

Messrs. Robert Crooks & Co., of Liverpool, under date of September 9th, say of tin and terne plates: The state of things reported in our last continues. Buyers of B. V. grade coke tins still hold somewhat aloof, while in other descriptions a steady business is doing at quotations.

Lead.—There has been a business of 300 to 400 tons at 5¼@5⅜c., including 200 tons of foreign corroding. At the close, 5¼c. is generally asked, and although the stock here is very light, there might be some obtained at say 5⅜c. The prospects favor a demand in excess of the supply for several weeks more, when it is thought the great scarcity will cease.

Spelter and Zinc.—Both are quiet but firm. We quote Spelter at 5¼, and Sheet Zinc at 7⅛@7¼c.

Antimony.—There is nothing of importance to write about this article. Cookson's is quoted at 14½c., and Hallett's at 13¾c.

Quicksilver.—We are indebted to our correspondent in San Francisco for the following interesting table, giving the total receipts of quicksilver at San Francisco, including direct shipments from the mines by rail since January 1st, 1881, up to August 31st, 1881:

Mines.	Flasks of 76½ lbs.
Altoona	103
California	23
Cloverdale	125
Great Eastern	620
Great Western	4,478
Guadalupe	3,752
Napa Consolidated	3,885
New Almaden	16,222
New Idria	1,585
Redington	1,574
St. John	109
Sulphur Bank	8,148
Various	19
Total	40,703

The exports by sea for the same period, 25,231 flasks, and by railroad to the East, Arizona, Utah, Dakota, etc., about 9350 flasks.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Sept. 23.

The country's loss has influenced quietness in the iron trade, but a greater cause for lack of business is a lack of first-class iron. The increased consumptive demand appears to have run ahead of the legitimate productive capacity of several branches of the iron trade. Prices have been improving, contrary to the wishes of many, and there does not seem to be any thing in the way of a further advance all through. The cable announces advances abroad, and there are indications that the European consumption is increasing. This puts foreign competition farther away and makes an advance here less dangerous. At the present time, there is but very little speculation. Should there be a revival of speculation, there will be nothing to keep prices anywhere near what they are.

American Pig.—There is business taking place in this article constantly at good prices, but the particulars do not come to public notice. Good brands are very scarce, and if the demand continues as large as it is, prices must advance. We quote No. 1 Foundry at $25; No. 2 Foundry, $23; and Forge, $21.

Scotch Pig.—The Scotch and Middlesbrough iron-masters have concluded an arrangement to shut down one eighth of their furnaces for six months. This has resulted in an advance in Warrants from 45@46s. to 51s., and a corresponding advance in No. 1 iron. The quotations here are $25@$25½ for Coltness; $24½@ $24¾ for Summerlee; $24 for Glengarnock; and $22½@$23 for Eglinton. Gartsherrie is sold all up, and not quoted. Freights are higher at 12s. 6d.@15s., and vessel room is not obtainable even at these rates. The engagements for early shipment to this country, in addition to a large quantity of Bessemer iron, are 12,000 tons of steel blooms. The foreign markets for all kinds of iron are firm or higher. Middlesbrough iron has been advanced to $19½, at which a small business has been done. Bessemer pig-iron is stronger, and quoted at $24½@$25.

Messrs. John E. Swan & Brothers, of Glasgow, under date of September 9th, report 119 furnaces, as against 39 at the same time last year. The quantity of iron in Connal & Co.'s stores was 582,252 tons, an increase of 1702 tons for the week. The shipments show a decrease since Christmas of 114,120 tons, as compared with the shipments to the same date in 1880. The imports of Middlesbrough pig-iron for the same period show an increase of 38,868 tons. The following were the quotations of the leading brands of No. 1 pig-iron: Gartsherrie, 55s.; Coltness, 57s.; Langloan, 57s.; Summerlee, 55s.; Carnbroe, 51s.; Glengarnock, 51s.; Eglinton, 48s. Middlesbrough pig-iron was quoted as follows, f. o. b.: No. 1 Foundry, 42s.; No. 2, 40s.; No. 3, 38s.; No. 4, 37s. 6d.; No. 4 Forge, 37s. 3d.

Messrs. J. Berger Spence & Co., of Liverpool, under date of September 10th, say pig-iron is slow of sale, and few buyers can be brought up to sellers' views for any large business. The damping-down of furnaces in Scotland had a good effect, but whether this will more than bridge over the moment requires to be seen. The volume of business in manufactured iron continues, and an enhancement in price should follow.

Rails.—The fact that there are but few rails offered for sale is perhaps largely the cause of our not being able to report any business this week. The foreign markets are very strong, and inclined to advance. Our mills have been securing the most satisfactory part of next year's business, but we shall unquestionably be compelled to call on Europe for large supplies. For delivery during the last half of 1882, our mills are asking $58@$60 for Bessemer rails. English rails for delivery during the rest of the year are quoted at $60 @$62. There is no stock here now, and the arrivals during the rest of the year are for railroads building, and not speculation. Iron rails are quiet, but the mills are well supplied with orders. We quote domestic at mills at $47@$49, and foreign here at $47½@ $49½.

Old Rails.—These are very quiet. We quote Ts. at $27¼@$27½, and D. Hs. at $30.

Wrought Scrap.—We learn of a sale from yard of 500 tons at $30. We quote from ship at $27½@ $28, and from yard at $30.

We publish the following letters from our regular correspondents :

Baltimore. Sept. 19.

[Specially reported by R. C. HOFFMAN & Co.]

The iron market remains quiet, demand fair, and prices without material change. We quote present prices about as follows :

Balt. Char...	$36.00@$38.00	Anth. No. 3..	$21.00@$22.00
Va. " ...	36.00@ 38.00	Mot. and Wh.	19.00@ 21 00
Anth. No. 1..	25.00@ 26.00	Cl.C.B.Bl'om	65.00@ 70.00
" " 2..	23.00@ 24.00	Refined Bl'm	55.00@ 60.00

Cincinnati. Sept. 21.

[Specially reported by JACOB TRABER & Co.]

While a large number of the principal consumers of iron have supplied themselves for some time at the low prices heretofore prevailing, yet there continues a very fair demand at an advance on previous prices, which there is every reason to believe will continue. We quote as follows :

	Four Months.
No. 1. Hanging Rock Charcoal...	$27.50@$28.00
No. 2. " " "	27.00@ 27.50
No. 1. Tenessee "	27.00@ 27.50
No. 2. " " "	26.00@ 26.50
No. 1. H. R. & Va. Coke	24.50@ 25.00
No. 2. " " "	23.50@ 24.00
Jackson Co. Stone Coal	21.00@ 23.50
H. R. C. B. Car-Wheels, all Nos.	39.00@ 40.00
Southern C. B. Car-Wheels, all Nos.	37.00@ 38.00
Virginia " " "	38.00@ 39.00

Louisville. Sept. 20.

[Specially reported by GEORGE H. HULL & Co.]

There is a good demand for hot-blast irons of all grades at full figures, but most of the furnaces are so fully sold ahead that they will not book any further orders, and sales in consequence are limited. There is a good supply of car-wheel irons, but little or no demand. Prices on all irons are firm, with a tendency to higher figures.

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal...	$27.00@$28.00	$25.00@$27.00
Southern Charcoal.....	24.00@ 25.00	22.00@ 23.00
H'n g Rock, Stc'l & Coke..	23.50@ 24.00	22.50@ 23.00
Southern Stonecoal & Coke	23.50@ 24.00	22 00@ 22.50

"Amer. Scotch"	$21 @$23	Silver Gray.	$20.00@$21.00
Scotch Iron.....	24 @ 26		

MILL IRONS.

No. 1 Charcoal, cold-short and neutral.....	$21.00@$22.00
No. 1 Stc'l & Coke, cold-short and neutral..	20.50@ 21.00
No. 2 Stc'l & Coke, cold-short and neutral...	19.50@ 20.00
No. 1 Missouri and Indiana, red-short.....	25.00@ 27.00
White & Mottled, cold-short and neutral.. ..	18.00@ 19.00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, cold blast.....	$35.00@$41.00
Alabama and Georgia, cold blast	35.00@ 38.00
Kentucky, cold blast.....	35.00@ 40.00
Hanging Rock W. B	29.00@ 33.00

Richmond. Sept. 20.

[Specially reported by ASA SNYDER.]

A decidedly firm iron market exists. Consumers find difficulty in procuring best grades of foundry pig. Quotations as below :

Scotch Pig-Iron..		$23.00@$27.00
Anthracite Pig-Iron	No. 1	24.00@ 26.00
" "	No. 2.....	22.00@ 24.50
" "	No. 3.	21.00@ 22 00
Virginia Coke Pig-Iron.	No. 1....	23 00@ 24.00
" "	No. 2.....	22.00@ 23.00
" "	No. 3.....	20.00@ 22.00
Va. Charcoal C. B. Wheel Iron.		34.00@ 36.00
Old Rails.....		27.00@ 29.00
Wrought Scrap No. 1....		22.50@ 24.00
Cast Machinery Scrap.		20.00@ 21.00
Richmond Refined Bar-Iron.....		@ 26-10
Horse-Shoes (Tredegar).....		@ 4.00
Mule " "		@ 5.0c

St. Louis. Sept. 17.

[Specially reported by HOFFER, PLUMB & Co.]

There is no change to note in this market. For cash we quote :

HOT BLAST CHARCOAL.

Missouri.....	$27.00@$27.50
Southern.....	26.00@ 26.50
Ohio.....	28.00@ 30.00

COKE AND COAL.

Missouri.....	$26.00@$27.00
Southern.....	24.00@ 25.00
Ohio.....	25.00@ 26.50

MILL IRONS.

Cold short.....	$21.50@$22.00
Red short.....	24.00@ 25.00

CAR-WHEEL AND MALLEABLE IRONS.

Missouri	$28.00@$30.00
Southern.....	35.00@ 38 00
Ohio.....	32.00@ 42.00

Philadelphia. Sept. 22.

Philadelphia iron quotations are as follows : No. 1 Foundry, $25@$26 : No. 2, $22 ; Gray Forge, $20@$21. Stocks in hands of consumers are growing lighter, and buyers are again feeling around for fresh supplies. The leading companies report offers for large lots running into 1882 ; but while the prices named are fair, furnace-men hesitate to assume further engagements so far in the future. The most of them have sold their current output at lower than present market rates, and want to profit by any improvement which may be in store. There is not much to sell, but the small quantities offered command good prices. Bessemer is inactive, but holders are asking $25@$25.50. New York parties are offering large lots at above figures.

The limited output of finished iron has not been overcome, and the demand is very active. In consequence, there is dissatisfaction and delay. Production is slowly increasing. The card is 2½c., store 2·7c., but rumors prevail of a change to 2.8c. Construction iron is active, and large deliveries are made. The mills have three months' work on hand, but manage to meet urgent needs frequently. Angles are 2.7c.; Tees, 3¾c.; Tank, 3½c.; Refined, 4c.; Shell, 4½c.; Flange, 5@5½c.; F. B., 6@6½c.; Sheet is not to be had under three months except in small lots. Inquiries are under consideration for winter deliveries. Steel rails are reported firm at $60. Some recent transactions were had near that figure, covering 20,000 tons, besides orders placed early in the week by New York parties. Nothing can be said concerning new iron rails or old rails.

John H. Austin & Co.'s Special Market Report.

LONDON, E. C., Sept. 8.

STEEL RAILS.—F. o. b. 5s. per ton. There are still sundry inquiries for prompt shipments of 35, 40, and 56-lb. sections ; but nothing worth mentioning is really obtainable before end of October.

IRON RAILS.—£5 5s.@£5 7s. 6d per ton; several fair orders placed for 56-lb. Sandbergs, buyers over for October deliveries, and can not place their orders.

BAR IRON.—Steady at £5@£5 5s. per ton common qualities.

OLD RAILS.—Owing to a few odd lots being offered in the market, prices of O. D. Hs. have nominally fallen to 87s. or 87s. 6d per ton, c. i. f.; these are buyers' views, but sellers do not bite, so no business is doing. Flanges are a dead letter.

HEAVY WROUGHT SCRAP-IRON.—Nothing doing.

STEEL BLOOMS, 7" × 7" AND UPWARD.—Large inquiries again in market for shipments January forward; a little done on the basis of £6 5s., c. i. f. New York.

BESSEMER PIG-IRON, Nos. 1, 2, AND 3.—Steady at 57s. 6@60s. per ton for choice brands.

SCOTCH PIG-IRON.—47s. 9d per ton. Market excited on the proposed reduction of make, which, however, will probably not be arranged just yet.

MIDDLESBROUGH PIG-IRON, No. 3.—37s. 6d per ton, following Scotch.

Referring to our freight report of the 1st inst., we have now to advise that steamers for the U. S. are rather scarce at present, consequently the rates have hardened, and some shippers here would improve a little on last week's quotations to save credits expiring.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Sept. 23.

Anthracite.

The death of President Garfield has thrown a gloom over the whole nation from which all business has suffered, and the coal business especially. Despite this influence, however, there are more inquiries than there were a week ago ; and although the improvement is not very marked, there is a better feeling among that class who were offering coal at the very lowest prices, and these at least have made a slight advance in prices.

Last week's production of coal made quite an advance over the previous week, but yet we are informed that there is no accumulation of stocks. This can readily be believed, when it is known that there was a slight reduction of stocks last month, when nearly every one was of the opinion that there was an over-production.

There is talk of an advance of prices on the first of next month. We do not believe that this can extend beyond chestnut size. The prices of bituminous coal are so low now that it is strange that so much anthracite is used for steam purposes.

The drought is still complained of, but it is evident by last week's production that the boilers are kept supplied with water by some means.

Vessels are very scarce and freights advancing. We do not see where any relief can be obtained this year. The coasting trade, for a number of years past, has been so unremunerative that, as vessels were wrecked or used up, they were not replaced in equal numbers, and the consequence is, that a largely developed general business, requiring a large amount of shipping, finds but a very inadequate supply.

The Western demand is still very great, and the supply of cars very small.

Mr. Franklin B. Gowen, one of the receivers of the Reading companies, has returned to this country, and is more than ever confident of a great future for the interests which he represents. The Bond management has done so little of what was expected of it that a very strong feeling in favor of the reinstatement of Mr. Gowen as president of these companies is developing.

The production of anthracite coal last week was 646,678 tons, as compared with 595,264 tons the previous week and 647,093 tons the correspon ding week of 1880. The total production from January 1st to September 17th was 19,289,700 tons, as against 15,603,615 tons for the like period of last year, showing an increase this year of 3,686,085 tons.

Our Philadelphia correspondent, under date of September 22d, says :

The demand for Stove is rapidly assuming the brisk condition which characterizes this season of the year, and Chestnut is growing gradually in better demand. The large sizes are all absorbed by the iron-works, and, with the exception of Broken and Pea sizes, the trade may be considered as lively, with a fair prospect for a couple of months. An advance is agitated for October 1st, particularly in Egg and Stove; for while inferior qualities of Stove seem plenty and rates much shaded, good qualities of both hard and free Stove are very scarce here.

Freights remain at $1.75 to Boston, rather weak on large vessels and very firm on vessels of 400@600 tons, while for light draught and small vessels, which continue very scarce, the tendency is upward.

Bituminous.

There is some improvement in the demand, and, at the same time, probably some in prices. Cars are still very scarce, greatly inconveniencing those who have full order-books. The Chesapeake & Ohio Canal has more water ; but now a new disturbance has occurred in the shape of a boatmen's strike. The production of the Cumberland region is again falling off, as compared with last year. The totals from January 1st show a loss of 51,425 tons this year. The Clearfield District, although suffering from a scarcity of cars, still maintains a very large production.

STATISTICS OF COAL PRODUCTION.

Comparative statement of the production of anthracite coal for the week ending Sept. 17th, and years from January 1st :

TONS OF 2240 LBS.	1881. Week.	1881. Year.	1880. Week.	1880. Year.
Wyoming Region.				
D. & H. Canal Co..	74,476	2,487,659	84,801	2,057 557
D. L. & W. RR. Co.	89,762	2,948,054	92,528	2,367,928
Penn. Coal Co.....	31,673	943,871	38,353	746,196
L. V. RR. Co.....	42,798	803,587	11,676	697,500
P. & N. Y. RR. Co..	2,832	68,249	1,000	25,570
C. RR. of N. J.....	51,184	1,625,189	52.974	1,089,027
Penna. Canal Co...	14,307	304,026	13,696	309,562
	307,032	9.180,635	295,028	7,293,340
Lehigh Region.				
L. V. RR. Co.....	103,059	3,080,127	93,142	2,284,813
C. RR. of N. J.....	48,819	1,496,909	59,478	1,417,546
S. H. & W. B. RR..	.....	8,576	.....	7,531
	151,878	4,585,612	152,620	3,709,890
Schuylkill Region.				
P. & R. RR. Co	162,165	4,750,178	175,251	3,992,491
Shamokin & Lykens Val....	24,547	729,120	23,205	576,222
	186,712	5,479,298	198,456	4,568,653
Sullivan Region.				
St Line&Sul.RR.Co.	1,056	44,155	989	31,732
Total	646,678	19,289,700	647,093	15,603,615
Increase.....	... .	3,686,085	.....	.....
Decrease	415	.....	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Total same time in 1876.....	11,300,038 tons.
" " " " 1877.....	13,526,100 "
" " " " 1878.....	11,491,771 "
" " " " 1879.....	18,100,650 "

The decrease in shipments of Cumberland Coal, over the Cumberland Branch and Cumberland & Pennsylvania railroads, amounts to 162,336 tons, as compared with the corresponding period in 1880.

The shipments of Cumberland Coal, over the George's Creek & Cumberland RR., by the Maryland and the American Coal companies, for the week ending Sept. 17th, amounted to 5503 tons, making a total of 99,896 tons since the beginning of transportation.

The Production of Bituminous Coal for the week ending Sept. 10th was as follows :

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lbs.....	42,643	1,451,582
Barclay Region, Pa.		
Barclay RR., tons of 2240 lbs	5,603	295,466
Broad Top Region, Pa.		
Huntingdon & Broad Top RR.....	4,086	149.556
East Broad Top.....	1,920	55,029
Clearfield Region, Pa.		
Snow Shoe.....	2,745	72,033
Tyrone and Clearfield.....	44,884	1,641,697
Alleghany Region, Pa.		
Pennsylvania RR..	6,261	186,760
Pittsburg Region Pa.		
West Penn RR.....	6,763	200,264
Southwest Penn. RR..	1,095	19,300
Penn & Westmoreland gas-coal, Pa. RR.....	17,543	619,934
Pennsylvania RR..	13,974	438,167

The Production of Coke for the week ending Sept. 10th, and year from Jan. 1st :

Tons of 2000 lbs.	Week.	Year.
Penn. RR. (Alleghany Region).....	1,246	47,714
West Penn. RR.....	2,231	82,471
Southwest Penn. RR	26,386	974,837
Penn. & Westmoreland Region, Pa. RR	435	130,245
Pittsburg, Penn. RR	6,656	413,263
Show Shoe (Clearfield Region).....	333	7,085
Total	37,286	1,675,555

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide-Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
* Pittston at Newburg	3 95	3 95	3 85	3 90	4 05	3 90
Scranton at Hoboken	3 90	3 90	3 90	4 05	4 20	3 90
Lackawanna at Weehawk'n	3 90	3 90	3 90	4 05	4 20	4 10
Wilkes-Barre at P. Johnston	3 90	3 90	3 90	4 05	4 20	3 90
Plymouth R. A. at P. John.	.....	....	3 90	4 15	4 50	4 00
LEHIGH COAL.						
Honey Brook at Port John.	5 00	.....	4 25	4 25	4 25	3 90
Cross Creek at Port John	4 40	4 40	4 35	4 35	4 25	4 00
Up. L. & Coun. Ri'g at Eliz'pt	.....	....	...	...	..	.....
SCHUYLKILL COAL. *At Elizabethport.*						
Hard White Ash	4 85	4 85	4 25	4 25	4 25	3 90
Free-Burning White Ash	.....	.....	3 90	4 05	4 20	3 90
Schuylkill Red Ash	.....	.....	....	4 05	4 30	3 90
Shamokin	....	.....	.....	4 25	4 45	3 90
Lorberry	.....	.....	.....	4 75	4 75	4 00
Lykens Valley (Brookside)	.. ..	.....	5 25	5 25	5 25	4 60
At Port Richmond, Philadelphia, for shipment to points beyond Capes of the Delaware.						
Hard White Ash	4 50	4 50	3 90	3 90	3 90	3 55
Free-Burning White Ash	.....	.....	3 55	3 70	3 85	3 55
Schuylkill Red Ash	.....	.....	.....	3 70	3 95	3 55
Shamokin	.....	.....	.....	3 90	4 10	3 55
Lorberry	.....	.....	.....	4 35	4 35	3 65
Lykens Valley (Brookside)	.....	...	4 75	4 75	4 75	4 25

* Fifty cents per ton additional for delivery at New York.

FREIGHTS.

Rates of Transportation on Coal for Northern and Western Shipment.

SOUTHERN CENTRAL RR., IN CONNECTION WITH THE LEHIGH VALLEY, PENNSYLVANIA & NEW YORK, UTICA, ITHACA & ELMIRA, NEW YORK CENTRAL & HUDSON RIVER, AND ROME, WATERTOWN & OGDENSBURG RAILROADS.

On a consignment of not less than 25 tons, from Lackawanna Junction, subject to regulations printed below, will be as follows:

To Auburn (local)	$2.35
" " for shipment N. Y. C. & H. R. RR.	1.85
" " points east of and including Syracuse	1.85
" Weedsport (local)	2.35
" " for shipment	2.01
" " " Rochester	1.83
" " points between Rochester and Buffalo	2.01
" " for Charlotte and Genesee Docks	1.67
" " " Buffalo, International Bridge, and Suspension Bridge	1.64
" " " Erie Canal, except Buffalo	1.82
" Sterling (local)	2.55
" " for shipment R. W. & O. RR.	2.27
" " " Oswego	2.27
" Fair Haven for shipment	2.29
" " " " " from Penn Haven	2.54

Rate, L. & B. Junction, to Buffalo, Black Rock, Suspension Bridge (via Weedsport), $2.86 per gross ton.

Rate, L. & B. Junction, to Rochester (via Weedsport), $2.47 per gross ton.

Rate, L. & B. Junction, to Buffalo, in return line cars (via Weedsport), $2.56 per gross ton.

Regulations.

A charge of 15 cents per ton will be collected of each consignee, on all coal not unloaded within 24 hours after its arrival, and an additional charge of 10 cents per ton for every 24 hours thereafter, Sunday and legal holidays excepted.

No allowance will be made for coal lost from cars on account of broken doors or other defects existing when the coal is loaded.

Claims for lost coal will be settled with shippers only.

Charges for freight or tolls will follow the coal from State line to destination, when consigned to points on and beyond the New York Central Railroad.

Ten cents per ton will be charged, at Weedsport docks, for shipping coal directly from cars to boats, and 12 cents per ton additional from stock, making a total charge on what is shipped from stock of 22 cents per ton.

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DIVIDENDS.

OFFICE OF THE CHRYSOLITE SILVER MINING COMPANY,
18 WALL ST., NEW YORK, Sept. 15, 1881.

THE BOARD OF TRUSTEES HAS THIS DAY declared a Dividend (No. 9) of One Hundred Thousand Dollars, being fifty cents per share of the capital stock, payable to stockholders of record on the 10th day of October, prox.

Transfer-books will close September 30th, at 3 P.M., and open October 11th. HENRY C. COOPER,
Secretary.

SAN FRANCISCO, Sept. 15, 1881.

THE EUREKA CONSOLIDATED MINING Company has declared a dividend (No. 71) of

FIFTY CENTS

per share, payable on the 27th inst. Eastern stockholders of record will be paid at the office of Laidlaw & Co., 14 Wall Street, New York.

Transfer-books close in San Francisco and New York 15th inst. W. W. TRAYLOR, Secretary.

DIVIDENDS.

OFFICE OF THE GREEN MOUNTAIN GOLD MINING COMPANY, of California, No. 18 Wall Street, New York, September 13th, 1881.

DIVIDEND NO. 27.

The Trustees have this day declared a dividend of SEVEN AND ONE-HALF CENTS per share on the capital stock of this company for the month of August (being the 27th consecutive monthly dividend; and making a total to date of $193,625), payable on the 26th inst.

Transfer-books close on the 19th, and reopen on the 28th of September. J. JAY PARDEE, Secretary.

OFFICE OF THE STARK-GROVE SILVER MINING COMPANY, No. 2 Nassau st., cor. Wall st.
NEW YORK, June 15, 1881.

DIVIDEND NO. 8.

The Board of Trustees have this day declared the regular monthly dividend of ten cents a share, being one per cent on the capital stock of the company, payable on the 30th inst, at this office.

The transfer-books will be closed from the 21st to the 30th inclusive WM. S. CLARK, President.
JOHN R. BOTHWELL, Secretary.

OFFICE OF COPPER QUEEN MINING COMPANY, 36 Thomas Street.
NEW YORK, Sept. 23, 1881.

The Board of Directors of this company have this day declared a monthly dividend (No. 4) of Twenty-five Thousand Dollars, being 10 cents per share on the capital stock, payable to stockholders of record on and after October 1st, 1881.

Transfer-books close September 29th, and reopen October 4th.

L. ZECKENDORF, Secretary and Treasurer.
A. A. HAYES, JR., President.

NEW YORK, Sept. 2, 1881.

THE STANDARD CONSOLIDATED MINING COMPANY to-day declared its regular monthly dividend of

SEVENTY-FIVE CENTS PER SHARE,

payable Sept. 12th, 1881, at the Farmers' Loan and Trust Co., 26 Exchange Place, New York.

Transfer-books close Sept. 5th, and open on 13th inst.
M. R. COOK, Vice-President.

DIVIDEND NO. 3.

OFFICE EXCHANGE SILVER MINING AND MILLING CO., of Nevada,
54 BROAD ST., ROOM 8, N. Y., Sept. 14, '81.

The Board of Directors have this day declared a dividend of three cents per share on the capital stock of the Company, payable September 30th, 1881. Books close the 26th inst., and reopen October 1st.

H. W. HOWELL, Treasurer.

OFFICE OF THE STORMONT SILVER MINING COMPANY, 2 Nassau Street, cor. Wall.
NEW YORK, Sept. 13, 1881.

DIVIDEND NO. 4.

The Board of Trustees have this day declared a monthly dividend of FIVE CENTS a share, payable on the first day of October, at this office.

The transfer-books will close on the 15th inst., and reopen October 3d. WILLIAM S. CLARK, President.
JOHN R. BOTHWELL, Secretary.

ROBINSON

CONSOLIDATED MINING COMP'Y.

DIVIDEND NO. 6.

NEW YORK, Sept. 1, 1881

The Board of Directors have this day declared a monthly dividend of Fifty Thousand Dollars, payable on and after Sept. 15th, at the office of the company, 18 Wall Street.

The transfer-books will be closed from 3 o'clock P.M. of the 9th until 10 o'clock A.M. of the 16th inst.

FINANCIAL STATEMENT FOR JULY, 1881.

Surplus on hand as per statement for June		$75,959.50
Sales, ore and bullion		40,454.22
Cash and bullion at mines		50,000.00
Bullion at refining works and in transit		65,000.00
		$231,413.72
Deduct bullion at works, as per last statement	$45,000.00	
Disbursements, purchases of land, mining and office expenses	30,050.00	
Dividend No. 5, payable August 15th	50,000.00	
		125,050.00
Surplus on hand August 1st, 1881		$106,363.72

JAMES. K. SELLECK, Secretary.

OFFICE OF THE JOCUISTITA MINING COMPANY, 18 Wall Street.
NEW YORK, Sept. 14, 1881.

DIVIDEND NO. 1.

The Jocuistita Mining Company has this day declared a dividend of $100,000, being one dollar ($1) per share, payable at the office of Lounsbery & Haggin, 18 Wall Street, on the 30th inst. Transfer-books close on the 24th inst.

After setting aside this dividend, the Company has a cash surplus of $367,000.

R. P. LOUNSBERY,
Treasurer.

THE NEW PULSOMETER.

CHEAP, ECONOMICAL, EFFICIENT.

OFFICE OF JOSEPH FIRMENICH, Steam Syrup Refinery, 1 to 25 Mortimer Street, and 386 to 412 Jefferson Street,
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J. FIRMENICH.

PULSOMETER STEAM PUMP CO.: GREENPORT, L. I., N. Y., May 6, 1881.

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